Energy, Mines and Resources Canada
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ENERGY OVERVIEW STUDY OF REMOTE COMMUNITIES IN NEWFOUNDLAND

Canada

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OF REMOTE COMMUNITIES
IN NEWFOUNDLAND

Prepared for:

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ENERGY OVERVIEW STUDY
FOR REMOTE COMMUNITIES IN NEWFOUNDLAND

Executive Summary

The Remote Community Demonstration Program was introduced in 1982 as part of the federal government's oil-off initiatives. The program is designed to promote the awareness and adoption of alternative-to-oil energy sources and energy conservation practices in remote communities in Canada.

To help in the operation and future planning of the program, Energy, Mines and Resources Canada commissioned this "overview" study to identify and profile remote communities in Newfoundland and Labrador which are eligible under the program, and to identify alternative energy sources and energy conservation options open to these communities.

Basically, the program defines a "remote community" as one that has at least 10 permanent residences, at least five years of planned life remaining and is not now connected to or firmly committed to connection with piped natural gas or main electrical grids.

In applying the definition to Newfoundland, it should be pointed out that no natural gas is produced or consumed in the province.

The study identified 79 Newfoundland and Labrador communities serviced by 39 isolated diesel generating plants as eligible under the program. These communities have 29,969 inhabitants, or 5.3% of the province's total population.

Obtaining data on these communities was extremely difficult. Except for a limited number of incorporated communities which have received funding to undertake municipal planning work, the data base on many communities in either non-existent or difficult to obtain.

Data on energy consumption in these communities, though incomplete, is estimated at 1,558,486 GJ. The study points out that, even if actual consumption is two or even three times higher, remote community energy consumption still does not account for more than 2-4% of the provincial total.

Each community is profiled by location, population, history and current status, community services and facilities, economic activities, communications and transportation links, and diesel electric generation information.

An assessment of likely alternatives to oil for both electricity and space heating has been done for each of the 39 centres. A load centre is defined as the location of a diesel generation station, containing one or more diesel generation units, from which one or more communities are served with electricity. Briefly, the conclusions are:

- small scale hydro is probably viable for nine load centres.
- many of the communities where wood is accessible already make extensive use of it. However, it is likely that the potential exists for further exploitation of fuelwood in many of these communities.
- the generation of electricity from wood using gasification technology shows some promise.
- based upon the scanty data available, it appears that peat is competitive as a solid fuel for use in stoves at a harvesting cost of up to $1.50 per cubic meter.
- Newfoundland does have substantial potential for the application of wind energy technology and, as the technology matures, it will likely find numerous applications in remote communities.
- the recovery of the waste heat from the cooling water of the diesel generating plant may be a viable option in some communities.

ETUDE GENERALE DES QUESTIONS ENERGETIQUES

DANS LES COLLECTIVITES ELOIGNEES DE TERRE-NEUVE

Résumé

Le Programme de démonstration dans les collectivités éloignées, lancé en 1982, est l'une des initiatives du gouvernement fédéral qui vise à remplacer le pétrole. Le Programme est conçu pour sensibiliser les collectivités éloignées au Canada et y promouvoir l'adoption de sources d'énergie autres que le pétrole et de pratiques permettant d'économiser l'énergie.

Aux fins de la mise en oeuvre et de la planification future du Programme, Energie, Mines et Ressources Canada a ordonné la tenue de cette étude générale afin d'identifier et de décrire les collectivités éloignées de Terre-Neuve et du Labrador qui sont admissibles en vertu du Programme, et d'identifier les options acceptables en matière d'économie d'énergie et de sources d'énergie de rechange.

Aux fins du Programme, une "collectivité éloignée" est essentiellement définie comme étant une agglomération d'au moins 10 habitations permanentes, qui est établie pour cinq autres années au moins et n'est pas, ou ne sera vraisemblablement pas, raccordée au réseau de distribution de gaz naturel par pipe-line ou à un réseau principal de distribution d'électricité.

Au moment d'appliquer la définition à Terre-Neuve, il ne faut pas oublier que la province ne produit ni ne consomme de gaz naturel.

Les résultats de l'étude ont montré que 79 collectivités de Terre-Neuve et du Labrador desservies par 39 centrales électriques à moteur diesel sont admissibles en vertu du Programme. Ces collectivités comptent 29 969 habitants, soit 5,3 % de la population totale de la province.

Il a été très difficile d'obtenir des données sur ces collectivités. A l'exception d'un nombre limité de collectivités érigées en municipalités qui ont reçu une aide financière afin d'exécuter des travaux de planification municipale, il n'existe pas de base de données dans le cas de nombreuses collectivités, ou il est difficile d'en constituer une.

Les données concernant la consommation d'énergie dans ces collectivités, bien qu'incomplète, sont estimées à 1 558 486 GJ. Les résultats de l'étude indiquent que, même si la consommation est en fait deux ou même trois fois plus élevée, la consommation d'énergie dans les collectivités éloignées ne compte toujours pas pour plus de 2 à 4% du total pour la province.

Chaque collectivité est décrite en termes d'emplacement, de population, d'évolution, de services et d'installations communautaires, d'activités économiques, de réseaux de transport et de communication ainsi que de production d'électricité à partir d'un moteur diesel.

Une évaluation des options permettant de remplacer le pétrole aux fins du chauffage des locaux et de la production d'électricité a été exécutée pour chacun des 39 centres de distribution. Un centre de distribution est par définition l'endroit où est située la centrale électrique à moteur diesel. Cette centrale peut toutefois comprendre une ou plus d'une unité de production à moteur diesel qui alimente une communauté ou plus en électricité. Brièvement, en voici les conclusions:

- Une petite centrale hydro-électrique est probablement viable dans le cas de neuf centres de distribution.

- De nombreuses collectivités qui ont accès au bois l'utilisent déjà largement. Toutefois, il est probable qu'il existe des possibilités d'exploiter davantage le bois de chauffage dans nombre de ces collectivités.

- La production d'électricité à partir de la gazéification du bois est une option quelque peu prometteuse.

- A partir du peu de données disponibles, il semble que la tourbe occupe une position concurrentielle à titre de combustible solide pour les poêles, à un coût de coupe pouvant s'élever à 1,50 $ le mètre cube.

- Il ne fait aucun doute que Terre-Neuve présente de grandes possibilités pour ce qui est de l'utilisation de l'énergie éolienne et, à mesure que les techniques seront perfectionnées, la province identifiera probablement de nombreuses applications dans les collectivités éloignées.

- La récupération des rejets thermiques provenant de l'eau de refroidissement de la centrale électrique à moteur diesel peut être une option viable dans certaines collectivités.

1.0 INTRODUCTION

1.1 GENERAL INTRODUCTION

The Remote Community Demonstration Program (RCDP) is the result of a Federal Government initiative outlined in the National Energy Program and is designed to promote the awareness and adoption of alternative energy sources and energy conservation practices in remote communities of Canada.

With a budgetary commitment of $16 million, the program is intended to operate from October 1982 to March 1986 and is divided into two phases. Phase One will operate from October 1982 to September 30, 1984, and will fund studies to investigate alternative energy supply and energy conservation options in remote communities. Phase Two will operate from the autumn of 1983 to March 31, 1986, and will provide financial assistance to demonstrate these alternative energy supply and energy conservation options in selected communities.

In order to assist in the operation and future planning of this program in the Province of Newfoundland, the Newfoundland Regional Office of Energy, Mines and Resources Canada called for an overview study to identify and profile remote communities in Newfoundland and Labrador which are eligible for the program, and to identify alternative energy sources and energy conservation options open to these communities.

The following report will present the findings of the overview study conducted in Newfoundland and Labrador.

1.2 PURPOSE

As is the case in other areas of Canada, the consumption of energy for power generation and space heating in remote communities of Newfoundland and Labrador is characterized by a dependency on imported crude oil and petroleum products, and by high prices for petroleum products. The Remote Community Demonstration Program (RCDP) will contribute to resolving this problem by promoting and supporting the adoption of alternative energy sources and enhanced energy conservation practices in these remote communities.

In an effort to have the Program meet both national and regional requirements it is important to understand the problems, priorities and objectives of each region. In the case of Newfoundland, the purpose of the overview study can be therefore defined as follows:

(1) to understand the objectives and priorities of the Newfoundland Government for energy supply in remote communities;

(2) to identify any on-going or planned energy supply activities of the various levels of government in the Province of Newfoundland;

(3) to identify those communities which would therefore be eligible under the Program;

(4) to outline the current levels of electrical services to these communities;

(5) to outline the total energy demand and supply picture in remote communities;

(6) where available, to predict the future demand for remote communities by energy source and sector;

(7) to identify general resource base considerations for renewable energy options;

(8) to outline technologies and measures which would have the most potential for specific communities or groups of communities;

(9) to identify the institutional and financial arrangements and barriers for energy supply in remote communities, and to highlight any other considerations specific to the Province of Newfoundland and its remote communities.

1.3 SCOPE OF WORK

In order to achieve the objectives of the Newfoundland overview study the following activities were required to be undertaken:

(1) to identify communities eligible for RCDP funding according to the definition provided;

(2) using available sources for each eligible community, to identify the following:

  (a) the location by co-ordinates;

  (b) the current population and annual population growth rate;

(c) the history, type, economic base and degree of permanence of each community;

(d) the type of electrical service, the supplier and source of electrical service, the annual electrical demand (three year historical and three year forecast), the peak load (three year historical and three year forecast), the utility rate structure (three year historical and three year forecast), and the rate payment profile for each type of customer in each community;

(e) the annual diesel and heating fuel consumption (three year historical and three year forecast), and the delivered cost of diesel and other petroleum fuels;

(f) the distance to the nearest grid point and the year in which grid connection is foreseen;

(3) when possible, to identify and abstract all previous or on-going studies on alternative (off-oil) energy supply and energy conservation with relevance to the remote communities;

(4) to list and describe federal and provincial government programs relevant to remote communities for off-oil conversion or energy conservation;

(5) where information is readily available, to identify and rank for each community the likely alternatives to oil usage for electrical generation and space heating, taking into consideration resource availability, technological

readiness, logistical and access considerations, operational factors, infrastructure needs, load following abilities and economic feasibility. Alternatives will include: hydro, wood, peat, wind, steam, solar, geothermal, cogeneration, heat recovery, grid extensions, natural gas, coal, district heating and conservation measures;

(6) to briefly identify general institutional, social, financial, economic, technical, or logistical barriers to the adoption of these technologies in Newfoundland and Labrador;

(7) to prepare a terms-of-reference document for conducting a detailed assessment of a community's energy demands (current and projected) and supply options; and

(8) to identify information gaps and to note where further study or follow-up work is needed, which could then be addressed in Phase 1.

2.0 COMMUNITY AND ENERGY PROFILES - GENERAL ANALYSIS

2.1 GENERAL INTRODUCTION

The first step in the process of profiling remote communities in Newfoundland and Labrador was to identify the communities which were eligible for the Remote Community Demonstration Program. According to the definition provided, communities could be considered eligible if they were off the main electrical grid and not serviced by a natural gas pipeline, there was no firm commitment to connect the communities to either a grid or natural gas distribution system, they had at least ten permanent residences, and if they had an expected life of at least five years.

In applying the definition to the Newfoundland situation several points are worth noting. Firstly, there is no natural gas presently being produced or consumed in Newfoundland. Secondly, there are presently no economically recoverable natural gas reserves in Newfoundland. Thirdly, there are no plans (short-, medium- or long-term) to extend a natural gas pipeline into the Province of Newfoundland from centers in mainland Canada. Fourthly, the structure of the electrical distribution system in Newfoundland is such that the Power Distribution District of Newfoundland and Labrador, a subsidiary of Newfoundland and Labrador Hydro, has the sole responsibility for providing electrical services to communities which are not part of the provincial power grid. Fifthly, the Power Distribution District of Newfoundland and Labrador will only supply electricity to communities which have a minimum of 15 permanent residences and a secure future.

Given the above background information, it became clear from discussions with officials of the Provincial Department of Mines and Energy and Newfoundland and Labrador Hydro that those communities which are serviced by isolated diesel generating plants would be the "eligible" remote communities in Newfoundland and Labrador. Consequently, it was determined that there are 39 isolated diesel generating plants currently in operation which service a total of 77 communities.

Once having identified the number and location of the remote communities in Newfoundland and Labrador, the process of collecting the necessary socio-economic and energy supply and consumption information to profile each community was undertaken. This process was generally more difficult than originally anticipated for a variety of reasons. Firstly, in Newfoundland and Labrador, as opposed to other provinces (eg. Manitoba or Saskatchewan), the number of communities to profile was much larger, and this meant that less time (both quantitatively and qualitatively) could be spent in dealing with each location. Secondly, because most communities in Manitoba and Saskatchewan were Indian reserves under the administration of federal and provincial authorities, the extent and availability of a consolidated information base was taken for granted. In

Newfoundland the situation is not comparable, and except for a limited number of incorporated communities who have received funding to undertake municipal planning work, the data base on many communities is either non-existent or difficult to obtain. Thirdly, the problem of non-co-operation, which is inherent in any research process, was encountered to some degree. The impact of each of these factors on the preparation of community profiles can best be illustrated by reviewing the contents of a profile and providing appropriate comments.

Each profile begins with a listing of the load centre name and communities serviced by that plant. The location of each community by co-ordinates is provided as well as a map showing the location of the load centre in Newfoundland and Labrador. Where available, a map of the distribution system is provided for the load centre in question, as well as any land use maps for the communities serviced by that load centre. Sources of information are also listed.

Section A - History and Current Status gives a description of the community's history and economic base, its historical and current population, a breakdown of the current population by age and gender, and its projected future population growth. Historical information is normally only available for those communities who have had town planning work completed. These include most of the Labrador communities as well as several of the larger communities on the Island, notably, St. Anthony, Fogo, Burgeo and Ramea. Current population data is available from the

1981 Census of Canada for all communities. The breakdown by age and gender is available for incorporated communities; however, for the remainder, estimates had to be made based on the percentage of the enumeration area represented by the community in question. Future population growth data was only available for communities with town planning documentation. The remainder were projected at 2% per annum.

Section B - Community Services describes the water, sewage, waste disposal, police protection and fire protection services available in each community. This information was obtained from municipal planning documents, the Department of Municipal Affairs and Housing, and the R.C.M.P. It is considered to be of reasonable quality and reliable.

Section C - Community Facilities provides information on health, education, housing characteristics and community buildings. The health and education information was obtained from the Departments of Health and Education, respectively, and is considered reliable information. Information on housing characteristics was obtained from municipal planning documents and Statistics Canada. This data is considered reliable only for incorporated communities. The information for other communities was estimated by taking the proportion of the enumeration area represented by the community in question. Furthermore, the data for the enumeration area was only sample data. A listing of community, institutional and commercial buildings was only available for communities with municipal planning documentation.

Section D - Economic Activities information was usually only available for communities with municipal planning information. This fact notwithstanding, the majority of communities have fishing as the primary industry.

Section E - Communications Links describes the radio, television and telephone facilities available in the community. This information was obtained from the Provincial Intergovernmental Affairs Secretariat and is considered to be reasonably accurate information.

Section F - Transportation Links describes the scheduled and local transportation services available in each community. This data was obtained from municipal planning documentation and the Provincial Department of Transportation. The information is considered correct for the Labrador communities profiled and for the Island communities with municipal planning documentation. For the remaining communities profiled on the Island the air transportation information is the only area which may require further clarification.

Section G - Diesel Electric Generation describes the type of diesel generating equipment in use, the annual consumption, the total cost and the cost per litre of diesel fuel for the years 1981 and 1982 (1980 was unavailable), and the historical and predicted electricity and peak load demand for the period 1980 to 1988. This information is only included in the profiles of communities which are load centres.

Section H - Assessment of Resources describes and assesses the likely alternatives to oil for both electrical generation and space heating requirements. The assessments are done on the basis of load centres, and consequently this section is only included in the profiles of communities which are load centres. A more detailed discussion of this topic is presented in Section 3.

The final component of the profile information available for these communities is the energy consumption data. Energy consumption is shown by energy source and by sector in both natural units and common energy units for the period 1982. There are several problems associated with this data which are worth noting. Firstly, the only energy source for which relatively complete and reliable data is available is electricity. Even here, however, there are problems. The year 1982 was the only year for which the Power Distribution District felt completely confident in the total consumption figures. Sectorial information is unreliable, as certain small commercial customers are included as residential customers, and no further classification of customers is available. Consequently, sectorial classification had to be estimated. Secondly, discussions with representatives of the oil companies proved less productive than expected. More specifically, Irving Oil Limited, which almost exclusively services the isolated communities on the south coast of Newfoundland, refused to supply any sales data. Woodward's Oil Limited, which provides an almost exclusive service to the isolated Labrador coastal communities, does not maintain accurate records of its sales to these communities. The only substantial accounts available in these communities are with Newfoundland and Labrador Hydro to supply the diesel generating stations. Consequently, the records which are kept are woefully inadequate. The information received from Woodward's was considered so unreliable that it was not used in the analysis. For the isolated communities in northern and central Newfoundland, some information which was useful was received from Imperial and Ultramar. However, the major problem was that data which was promised has not yet been received. This is especially true of Ultramar. As a consequence of these problems with the oil companies, oil consumptiom figures were estimated for the residential sector from the information made available by Statistics Canada. Unfortunately, a comparable methodology is not available to estimate the oil demands of the commercial and industrial sector. In order to estimate these sectors a visit to the community appears to be the only option remaining. Thirdly, there is no information base presently available for fuelwood usage on a sector-by-sector basis. Estimates were made of fuelwood in the residential sector based on the information available from Statistics Canada. This, however, is not possible for the commercial and industrial sectors, and additional research at the community level is required if fuelwood usage in these sectors is to be taken into account.

2.2 DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS

As referenced in Section 2.1, there are 39 load centres encompassing 77 communities which have been identified as eligible for the Remote Community Demonstration Program. In geographical terms, these communities are widely dispersed throughout the coastal areas of Newfoundland and Labrador. Table 2.2.1 provides a summary of their distribution.

Table 2.2.1

Geographical Distribution of Remote Communities

Area	No. of Load Centres	% Total	No. of Communities Serviced	% Total
Labrador	16	41%	27	35%
Northern Newfoundland	6	15%	23	30%
Central Newfoundland	5	13%	15	19%
Southern Newfoundland	12	31%	12	16%
Total	39	100%	77	100%

The load centres and related communities are concentrated on the coast of Labrador, on the east and west sides of the Great Northern Peninsula, on the island communities off the north-eastern coast of Newfoundland, and on the central and western portions of the south coast.

The total population of these communities and the proportion they represent of Newfoundland and Labrador as a total is summarized in Table 2.2.2.

Table 2.2.2

Comparative Population Statistics
Remote Communities vs. Total Province - 1981

	Population				
	Male	% Total	Female	% Total	Total
Remote Communities	15,513	52%	14,359	48%	29,862
Total Province	286,000	50%	282,000	50%	568,000
% Total	5.4%		5.1%		5.3%

From the above table it is clear that the remote communities represent a small proportion of the total population, only 5.3%. The ratio of men to women, while slightly higher in favour of men in remote communities, is relatively equal at approximately 50/50. The average population in the remote communities is 388.

With respect to economic characteristics, several points are worth mentioning. With the exception of the larger communities such as St. Anthony, Fogo, Burgeo and Ramea, who have populations in excess of 1,000 and are relatively sophisticated in terms of social and economic infrastructure, most of the remote communities throughout Newfoundland and Labrador are dependent upon primary fishing. The exceptions to this general rule are certain of the Labrador communities which in addition to fishing also rely on hunting and trapping, and certain of the communities on the eastern side of the Great Northern Peninsula, which in addition to fishing rely on logging and sawmilling operations.

In general terms, however, it can be said that the fishery is the economic mainstay of these remote communities.

2.3 ENERGY SUPPLY AND CONSUMPTION PATTERNS

In terms of conventional energy sources, i.e. petroleum products and electricity, the remote communities are completely dependent on external sources to meet supply requirements. This statement is generally true for all parts of Newfoundland and Labrador but is especially significant for these communities. Firstly, electrical generation requirements in almost all cases are met by higher cost diesel fuel rather than hydro or lower cost heavy fuel oil, as in other areas of the province. Secondly, many communities are only accessible by boat and are serviced by one agent. These factors combine to produce threats of supply shortages, especially in winter, and higher unit costs. In the case of non-conventional energy sources, i.e. wood, the majority of communities which have reasonable quantities of accessible wood supplies harvest and utilize this resource quite extensively.

With respect to consumption patterns, the unavailability of data makes analysis difficult, but nevertheless several trends are worth noting. The average consumption of electricity in remote communities, for example, is lower than the provincial average for other - domestic customers, i.e. non-electric space heating customers. This situation results from a variety of factors such as higher electricity rates and lower-than-average income levels. For those communities where information is available, the average consumption of heating oil appears to be lower than other parts of the province. This situation reflects higher unit energy costs, lower-than-average income levels, and the resulting tendency to increase, where available, the consumption of fuelwood.

Table 2.3.1

Remote Communities
Total Energy Consumption - 1982

Electricity (kwh)	Furnace Oil (litres)	Kerosene (litres)	Fuelwood (tonnes)	
72,751,450	18,241,525	6,347,933	43,046	
Electricity (GJ)	**Furnace Oil (GJ)**	**Kerosene (GJ)**	**Fuelwood (GJ)**	**Total (GJ)**
261,905	705,582	239,190	348,189	1,554,866

Because the total consumption figures outlined above are understated owing to missing commercial and industrial sector petroleun product consumption data, it is not reasonable to compare these figures to the total provincial consumption of energy for 1982. This notwithstanding, however, if the above consumption were to increase by a factor of two or even three, the total consumption of energy by remote communities would not account for any more than 2-4% of total provincial energy consumption.

2.4 ENERGY COSTS

The rate structure for the Power Distribution District for the last three years will be presented in this section. The rate structure in effect on November 1, 1980, is summarized below:

POWER DISTRIBUTION DISTRICT OF NEWFOUNDLAND AND LABRADOR

RATE NO. 1.2
DOMESTIC DIESEL

Availability:

Throughout all the diesel service areas of PDD, for all domestic purposes, including electric space heating, in houses or in household units, occupied by one family only.

Rates:

Basic Customer Charge	$ 6.00
First 500 kilowatthours per month	@ 4.10¢ per kwh.
Next 500 kilowatthours per month	@ 6.86¢ per kwh.
All kwh. over 1000 kilowatthours per month	@ 9.28¢ per kwh.
Miminum monthly charge	$6.00

Discount:

For payment of an account within ten days after it is issued, a discount of 10% of the amount of the bill, up to a maximum of $1.00 per month, will be allowed.

Multi-Unit Domestic Buildings and Multiple Households:

All new multi-unit domestic buildings shall have individual meters for each self-contained domestic unit. Existing bulk metered multi-unit domestic buildings may continue to be billed under a variation of this rate as follows:

The quantity of energy in each block of this rate will be multiplied by the number of units served through the meter and the appropriate price per kilowatthour will be applied to each block to produce one bill for all energy used in the building. Households occupied by more than one distinct family and served through a single meter shall be treated in similar manner, each distinct family being considered as a domestic unit.

Fuel Adjustment Clause:

The rate is subject to the Fuel Adjustment Clause which forms part of the Rate Schedule.

POWER DISTRIBUTION DISTRICT OF NEWFOUNDLAND AND LABRADOR

RATE NO. 2.5
GENERAL SERVICE DIESEL

Availability:

Throughout all the diesel service areas of PDD for non-domestic services.

Rate:

All kwh. @ 13.86¢ per kilowatthour

Minimum monthly charge - $11.30

Discount:

For payment of an account within ten days after it is issued, a discount of 10% of the amount of the bill, up to a maximum of $1.00 per month, will be allowed.

The rates in effect on December 1, 1981, are as follows:

POWER DISTRIBUTION DISTRICT OF NEWFOUNDLAND AND LABRADOR

RATE NO. 1.2
DOMESTIC DIESEL

Availability:

Throughout all the diesel service areas of PDD, for all domestic purposes, including electric space heating, in houses or in household units, occupied by one family only.

Rates:

Basic Customer Charge	$ 7.75
First 500 kilowatthours per month	@ 4.30¢ per kwh.
Next 500 kilowatthours per month	@ 7.86¢ per kwh.
All kwh. over 1000 kilowatthours per month	@ 10.64¢ per kwh.
Miminum monthly charge	$7.75

Discount:

For payment of an account within ten days after it is issued, a discount of 10% of the amount of the bill, up to a maximum of $1.00 per month, will be allowed.

Multi-Unit Domestic Buildings and Multiple Households:

All new multi-unit domestic buildings shall have individual meters for each self-contained domestic unit. Existing bulk metered multi-unit domestic buildings may continue to be billed under a variation of this rate as follows:

The quantity of energy in each block of this rate will be multiplied by the number of units served through the meter and the appropriate price per kilowatthour will be applied to each block to produce one bill for all energu used in the building. Households occupied by more than one distinct family and served through a single meter shall be treated in similar manner, each distinct family being considered as a domestic unit.

Fuel Adjustment Clause:

The rate is subject to the Fuel Adjustment Clause which forms part of the Rate Schedule.

POWER DISTRIBUTION DISTRICT OF NEWFOUNDLAND AND LABRADOR

RATE NO. 2.5
GENERAL SERVICE DIESEL

Availability:

Throughout all the diesel service areas of PDD for non-domestic services.

Rate:

All kwh. @ 15.88¢ per kilowatthour

Minimum monthly charge - $12.85

Discount:

For payment of an account within ten days after it is issued, a discount of 10% of the amount of the bill, up to a maximum of $1.00 per month, will be allowed.

Fuel Adjustment Clause Not applicable.

The rates in effect on January 1, 1983, are as follows:

POWER DISTRIBUTION DISTRICT OF NEWFOUNDLAND AND LABRADOR

RATE NO. 1.2
DOMESTIC DIESEL

Availability:

Throughout all the diesel service areas of PDD, for all domestic purposes, including electric space heating, in houses or in household units, occupied by one family only.

Rates:

Basic Customer Charge	$ 8.50
First 500 kilowatthours per month	@ 4.38¢ per kwh.
Next 500 kilowatthours per month	@ 8.18¢ per kwh.
All kwh. over 1000 kilowatthours per month	@ 11.08¢ per kwh.
Miminum monthly charge	$8.50

Discount:

For payment of an account within ten days after it is issued, a discount of 10% of the amount of the bill, up to a maximum of $1.00 per month, will be allowed.

Multi-Unit Domestic Buildings and Multiple Households:

All new multi-unit domestic buildings shall have individual meters for each self-contained domestic unit. Existing bulk metered multi-unit domestic buildings may continue to be billed under a variation of this rate as follows:

The quantity of energy in each block of this rate will be multiplied by the number of units served through the meter and the appropriate price per kilowatthour will be applied to each block to produce one bill for all energu used in the building. Households occupied by more than one distinct family and served through a single meter shall be treated in similar manner, each distinct family being considered as a domestic unit.

Fuel Adjustment Clause:

The rate is subject to the Fuel Adjustment Clause which forms part of the Rate Schedule.

POWER DISTRIBUTION DISTRICT OF NEWFOUNDLAND AND LABRADOR

RATE NO. 2.5
GENERAL SERVICE DIESEL

Availability:

Throughout all the diesel service areas of PDD for non-domestic services.

Rate:

All kwh. @ 16.53¢ per kilowatthour

Minimum monthly charge - $13.38

Discount:

For payment of an account within ten days after it is issued, a discount of 10% of the amount of the bill, up to a maximum of $1.00 per month, will be allowed.

Fuel Adjustment Clause: Not applicable.

In evaluating the rate structure used by the Power Distribution District over the last three years, it is clear that there have been no significant changes to the underlying philosophy governing rate design. The only area in which there has been significant increases is in the basic customer charge levied on domestic diesel customers. The average annual increase for the past three years was 12% per annum. For the first 500 kwh. consumed, which is the grouping in which most customers fall, the rate of increase during the same period was only 2%. Above 500 kwh., the average rate increase has been 6%. For commercial customers the average increase over the last three years has been reasonable as well, averaging 6% per annum. The possible increases resulting from future rate changes was a subject the Power Distribution District did not wish to address.

Information on the cost of furnace fuel and kerosene was obtained from the Provincial Department of Mines and Energy. It is based on a province-wide survey which is conducted annually for that department by the Newfoundland Statistics Agency. A selected illustration of the costs of furnace oil and kerosene for the past three years will be presented in the following tables.

Table 2.4.1

Comparative Cost of Furnace Oil - Selected Communities - Newfoundland and Labrador

Community	1981	1982	1983	% Increase 1981-1982	% Increase 1982-1983
	(Cents per litre)				
St. John's	24.5	31.1	35.4	26.9	13.8
Burin	24.8	31.8	36.3	28.2	14.2
Ramea*	26.1	35.2	39.0	34.5	11.1
Corner Brook	24.4	31.4	35.7	28.7	13.7
Gander	24.9	31.9	36.2	28.1	13.5
Glovertown	25.0	32.0	36.2	28.0	13.1
Fogo*	24.8	31.9	36.0	28.6	12.9
Seldom*	24.8	31.9	36.0	28.6	12.9
Change Islands*	26.5	33.5	37.8	26.4	12.8
Englee*	26.9	31.9	36.1	18.6	13.2
St. Anthony	24.9	31.6	36.1	26.9	14.2
Happy Valley-Goose Bay	22.4	31.9	37.2	42.4	16.6

* Remote Communities

The information in the above table illustrates that remote communities do not pay significantly higher prices for furnace oil than other locations. With the exception of Ramea, which pays approximately 10% higher prices, most of the other remote communities referenced above either paid the same average price or a difference of not more than 3-4%.

The cost of kerosene and stove oil in selected locations throughout Newfoundland and Labrador over the last three years is presented in the following table.

Table 2.4.2

Comparative Cost of Kerosene and Stove Oil
Selected Communities - Newfoundland and Labrador

Community	1981	1982	1983	% Increase 1981-1982	% Increase 1982-1983
	(Cents per litre)				
St. John's	26.0	33.1	37.2	27.3	12.4
Burin	26.2	33.2	37.9	26.7	14.2
Ramea*	26.6	--	40.1	--	--
Corner Brook	25.8	33.0	37.5	27.9	13.6
Gander	26.4	33.5	38.0	26.9	13.4
Glovertown	26.4	33.4	37.8	26.5	13.2
Fogo*	26.5	33.9	38.0	27.9	12.1
Seldom*	26.5	33.9	38.0	27.9	12.1
Change Islands*	27.8	35.1	39.4	26.3	12.3
Englee*	28.7	33.9	38.1	18.1	12.4
St. Anthony*	26.3	32.9	37.6	25.1	14.3
Happy Valley-Goose Bay	23.7	33.2	38.7	40.1	16.6
Cartwright*	31.3	38.7	46.6	23.6	20.4
Mary's Harbour*	32.6	42.9	48.0	31.6	11.9
L'Anse au Loup*	26.0	33.6	38.1	29.2	13.4
Nain*	28.2	38.8	44.6	37.6	14.9
Port Hope Simpson*	34.3	43.6	42.0	27.1	-3.7

* Remote Community

From the information contained on the above table one can see that for remote communities on the island of Newfoundland the prices are not significantly higher than other communities. The average difference does not normally exceed 3-4%. However, there are major differences between the remote communities in Labrador and other communities in the province. The price differential here is usually between 15-20%.

3.0 ALTERNATIVE RESOURCES AND CONSERVATION OPTIONS - GENERAL ANALYSIS

3.1 GENERAL INTRODUCTION

The terms of reference for this overview study required the consultant to evaluate a large number of alternatives. These alternatives were to include the following: hydro, wood, peat, wind, steam, solar, geothermal, cogeneration, heat recovery, grid extensions, natural gas, coal, district heating, and conservation measures.

At the outset of this study it became apparent that certain of these alternatives were not applicable to the Newfoundland situation. Given the unavailability of economically recoverable natural gas reserves, appropriate geothermal sites, and the limited quantity and quality of local coal deposits, these options were eliminated from further analysis. Furthermore, it became clear that, with a large number of load centres to evaluate (39) and with a limited budget, the analysis of alternatives would have to focus on those options which were most relevant to the Newfoundland environment. As a consequence, it was agreed that solar and steam would be excluded from the analysis. Therefore, the list of alternatives to be analyzed was narrowed to the following: hydro, wood, peat, wind, cogeneration, heat recovery, district heating, grid extensions and conservation measures. In addition, it was requested that some general comments be offered on nuclear energy.

For this somewhat shortened list of alternatives it was intended to offer a comparative economic analysis of all these options. However, it became apparent during the study that appropriate information, eg. inventory data, cost data, on most of these alternatives was either non-existent or inadequate to allow a comprehensive analysis to be completed. As a consequence, most of the detailed economic analysis has focussed on that technology for which appropriate information is available, i.e., small scale hydro. For the remaining alternatives comments are unfortunately, but necessarily, of a more general nature. Specific references to the problems associated with non-existent or inadequate data are made throughout the report.

3.2 ECONOMIC ANALYSIS

Energy demand in these communities can be divided into two categories:

1. Electricity
2. Heating energy (including process heat)

Using existing methods, the true cost of electricity can easily be determined from the actuarial records of the utility company. This provides a reference case against which competing alternatives can be compared.

The true cost of heating energy is more difficult to establish. The true cost of heating with fuel oil is easily determined, but the cost of heating with fuel wood is virtually impossible to determine, since it is harvested by the individual homeowner and would require the determination of the opportunity cost of the homeowner's time as well as the appropriate portion of the owning and operating cost of equipment such as trucks, snowmobiles and chainsaws. In any event, it is the apparent cost of energy to the homeowner which determines the potential for inter-fuel substitution. This becomes largely a subjective judgement on his behalf but is in actual fact probably quite low in many cases.

Given these difficulties in determining the true cost of heating energy, the economic analysis in this study is confined to alternatives for the generation of electricity. As referenced and discussed in Section 3.1, the economic analysis is focussed principally on small scale hydro developments for which cost information is readily available. Because of the inadequate information base, comments on the economic viability of other alternatives for electric generation are necessarily of a more general nature.

The economic indicator used for comparing the alternatives is the Annual Equivalent Cost per unit of energy (A/P, i, n) where P is the present worth of the stream of annual cash flows. It is conceptually and mathematically equivalent to the Discounted Levelized Unit Fuel Cost used in the economic analysis of the Roddickton Mini-Hydro Development. This indicator has a number of advantages for a general overview type of study.

Firstly, it is largely independent of forecasted growth in energy consumption in the communities, since it is computed on a unit energy basis. Secondly, if used with system-wide averages for diesel fuel cost and conversion efficiency, it minimizes the number of calculations which have to be performed.

The use of system-wide averages is a valid approach for the following reasons:

1. The Annual Equivalent Cost is a composite economic evaluator reflecting the influences of general inflation, cost of money, fuel price escalation, capital recovery, etc. on the long-term cost of energy. Many of the parameters which influence the Annual Equivalent Cost are not precisely known, in particular the capital cost of small scale hydro developments. Other parameters such as the cost of money and cost escalation rates are based on system-wide averages or general economic conditions. These uncertainties will tend to offset variations in fuel cost and conversion efficiencies among communities. To base a worthwhile analysis on community-specific fuel cost and conversion efficiency would require that some of these other parameters be known on a community-specific basis, or alternatively, that extensive sensitivity analyses be performed to determine their impact upon the results.

2. Without performing a trend analysis based on several years of data it cannot be determined whether the quoted costs for the base year (1982) are representative of the long-run fuel

cost for the community. Similarly, given the extensive equipment relocation and reuse program conducted by the Power Distribution District with the resulting changes in the parameters which influence conversion efficiency, the base year conversion efficiency for individual communities may not be representative of the long-term trend.

3. Finally, the purpose of the economic analysis offered in this study is to provide a first-cut indication of the likely viability of the various alternatives. It is not intended that the results be viewed as a definitive assessment of the economic merits of any alternative.

The unit energy cost estimates given in this report are useful for comparative purposes only and do not represent the true cost of energy. With the exception of the analysis of wind energy technology (where maintenance costs are a dominant component of total cost) maintenance costs have been neglected.

3.3 SMALL SCALE HYDRO POTENTIAL

A considerable body of information on small scale hydro potential in Newfoundland and Labrador currently exists, including at least two inventories of potential sites. These inventories indicate an extensive physical potential. A 1979 study prepared for Newfoundland and Labrador Hydro by Shawmont Newfoundland Limited identified no less than 83 sites with capacities ranging from 30 kw. to 1.8 mw. and capable in theory of producing sufficient energy to meet the needs of most of the remote communities currently supplied by diesel generation. This inventory was based on the detailed examination of 1:50,000 scale topographic maps. The geographic distribution of these sites is such that there is potential for small scale hydro development within close proximity to 27 of the approximately 39 diesel generating plants currently operated by the Power Distribution District. A brief description of each of these 83 sites is contained in the corresponding profiles in Sections 4-7.

In the Shawmont study these 83 sites were subjected to a screening process to determine the most promising site in each area. The criteria used in the screening process were as follows:

1. The energy potential of the development should be appropriate for the load which it is to serve;
2. The physical characteristics of the site must be conducive to reasonable construction and operating costs;
3. The sites must have a minimal adverse impact upon the environment. This will eliminate sites with known archaeological potential, sites within national and provincial parks, and rivers designated as either salmon rivers or "wild" rivers.

Following the screening process, order of magnitude cost estimates (± 25%) were developed for each of the 27 sites selected and an economic analysis was performed. To keep costs within reasonable levels, emphasis was placed on simple designs using straightforward components with maximum utilization of local materials and labour. Sophisticated automatic controls were considered counterproductive, since they impaired the ability of the operator to gain an intuitive understanding of plant operation.

The cost estimates prepared for the Shawmont study have been updated to reflect current conditions for presentation in this report. All costs are given in current (1983) dollars. Appropriate cost increase factors were obtained from the Systems Planning Department of Newfoundland and Labrador Hydro.

The economic analysis is based on the assumption that the hydro plants will be installed as fuel savers. Therefore, no allowance has been made for any contribution by the hydro plants toward firm generating capacity. The capital cost of the hydro installations must be recovered entirely from savings in fuel costs. Indeed, the capital cost estimates for small scale hydro plants used in this analysis are based on simple, even crude, designs suitable for fuel saver designs only. More sophisticated (and costly) components, control systems and operating procedures would be required to maintain the reliability levels necessary to permit these plants to displace firm diesel capacity.

The results of the analysis indicate that small scale hydro development is probably viable for the following load centres:

Community	AEC ($/kwh.)
Burgeo	0.11
St. Anthony	0.14
Harbour Deep	0.19
L'Anse au Loup	0.19
Cartwright	0.20
Westport	0.20
Francois	0.23
Makkovik	0.23
Monkstown	0.25

For the purpose of comparison, the Annual Equivalent Cost (AEC) for diesel generated electricity is $0.25, assuming a discount rate of 12% and a long-term cost escalation value for diesel fuel of 11%.

Additionally, sites at Grand Bruit, Rencontre East and Mary's Harbour may also be viable if costs can be kept near the lower end of the estimated range. The result of the analysis for all 27 sites is given in Table 3.3.1.

Realizing the benefits of small scale hydro developments will require an innovative approach to construction and project management based on close co-operation between the community and the contractor with a maximum of local content and project control. To quote the Shawmont report:

> One of the biggest challenges facing small scale hydro is the organization and supervision of construction and equipment installation on site. The forces involved are small, typically a crew of perhaps 20-30 men, for a few months, but working conditions will often be difficult and a considerable number of technical skills will be needed. The conventional approach, i.e., procurement via competitive tender (supported by

thorough specifications and contract documentation), and mobilization of an experienced contractor (often involving the importation of a considerable portion of the required manpower from outside the local community) is almost certain to lead to high costs. Instead, the approach should stress the delegation of authority (technical, managerial, and financial) to a small group of experienced personnel on site with the ability to obtain the maximum construction input from the local community.

TABLE 3.3.1

SMALL SCALE HYDRO POTENTIAL
RESULTS OF ECONOMIC ANAYLSIS

Hydro Scheme	Installed Hydro Capacity kw	Annual Energy Generation kwh	Annual Equivalent Cost $/kwh	Total Capital Cost (thousands of 1983 dollars)
Newfoundland				
Burgeo	650	3,316,000	$0.11	2063 - 2750
Croque	17	107,000	0.60	413 - 550
Francois	75	429,000	0.27	688 - 1031
Grand Bruit	30	177,000	0.36	413 - 550
Grandois	16	85,000	0.54	275 - 413
Grey River	35	247,000	0.47	688 - 1031
Harbour Deep	150	756,000	0.19	963 - 1238
La Poile	50	298,000	0.51	963 - 1306
McCallum	50	326,000	0.45	963 - 1238
Monkstown	50	300,000	0.25	413 - 688
Petit Forte	35	158,000	0.58	550 - 825
Petites	40	250,000	0.59	963 - 1238
Rencontre East	65	408,000	0.41	1031 - 1444
Roddickton	440	1,480,000	0.16	1375 - 2063
St. Anthony	520	1,866,000	0.14	1650 - 2338
South East Bight	20	85,000	1.08	550 - 825
Westport	175	858,000	0.20	1031 - 1513
Labrador				
Cartwright	130	575,000	0.20	688 - 1031
Charlottetown	70	315,000	0.44	825 - 1238
Fox Harbour	60	340,000	0.47	1031 - 1375
L'Anse au Loup	420	1,403,000	0.19	1650 - 2269
Makkovik	200	997,000	0.23	1375 - 2063
Mary's Harbour	130	678,000	0.34	1375 - 2063
Paradise River	35	194,000	0.59	688 - 1031
Port Hope Simpson	90	423,000	0.46	1238 - 1650
Postville	50	314,000	0.53	1100 - 1375
Rigolet	60	280,000	0.49	825 - 1238

3.4 WOOD ENERGY POTENTIAL

It is difficult to obtain a complete picture of the potential for fuelwood utilization in remote communities with the information currently available. The inventory information contained in the community profiles has been extracted from 1:250,000 scale land capability maps obtained from the Provincial Department of Forest Resources and Lands. Data on the extent of existing reserves is not easily obtained from these maps and must therefore be omitted from the profiles. The data base to estimate existing reserves is contained on approximately 150 forest inventory maps with scales of 1:12,500 to 1:50,000. Consolidation and analysis of this information would consume a disproportionately large portion of the resources allocated for this study and was therefore deemed to be outside the scope of work. It is recommended that this analysis be completed in Phase One of the R.C.D.P. Program.

Based on the information available, it is therefore not possible to produce a quantitative assessment of the potential for wood energy utilization. Many of the communities where the resource is accessible already make extensive use of fuelwood; however, it is likely that the potential exists for further exploitation of wood energy in many of these communities.

The generation of electricity using steam boilers and turbines using wood as fuel does not appear to be economically viable. This conclusion is based on the Middleton Associates study as reported in the Saskatchewan overview study. However, the generation of electricity from wood using gasification technology shows some promise. Preliminary cost data from manufacturer's information would yield an Annual Equivalent Cost of energy of $0.30 per kwh., assuming a supply of wood could be obtained for $28 per metric tonne. Such a system may be a candidate for demonstration provided an in-depth assessment of the environmental impact identifies no adverse effects resulting from byproducts of the gasification process.

3.5 PEAT ENERGY POTENTIAL

There is very little cost data available upon which to base an assessment of the economic viability of peat as an energy source. However, based upon the scanty data which is available, it would appear that peat is competitive as a solid fuel for use in stoves at a harvesting cost of up to $1.50 per cubic meter.

The use of peat as a solid fuel for the production of electricity using steam boilers and turbines does not appear to be an economically viable alternative. Similarly, the upgrading of fuel by gasification to high quality syngas is either insufficiently developed or inappropriate for application in remote communities by virtue of the production scale required to make such a venture economically viable.[1] However, the production of electricity using low quality gas from a gasifier may be viable, but the economics are sensitive to the cost of harvesting peat in sufficient quantities. If peat could be harvested with costs comparative to wood, i.e., $28 per metric tonne, then the Annual Equivalent Cost of this technology would also be $0.30 per kwh. At this cost peat would become more competitive with diesel generated electricity which has an estimated Annual Equivalent Cost of $0.25 per kwh.

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[1] "Assessment of Alternative Generation Technologies Phase II," Middleton Associates et. al., September 1982.

3.6 WIND ENERGY POTENTIAL

The potential for extracting useful energy from the wind is dominated by the detailed microclimatic and topographic conditions at the chosen site. Variations in conditions among several sites in the same general area can be significant. Therefore, the accurate determination of the wind energy resources in a given area requires that actual wind measurements be obtained for the site of interest over an extended period of time, preferably for a period of at least one year. This information is presently unavailable for any of the load centres analyzed in this study and would have to be collected before detailed economic analysis can be performed.

The wind energy resource estimates given in this study are based on mean annual wind speeds as recorded at the various Environment Canada meteorological stations throughout the province. The calculations assume an ideal horizontal axis wind turbine operating at the maximum theoretical aerodynamic

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[2] Saskatchewan Overview Study, Underwood and McFellow.

efficiency with adjustments for mechanical and electrical system losses. They must therefore be treated as only very general estimates of the wind energy potential in a given area.

The state of large scale wind turbine technology must still be considered immature and the subject of further refinement. For this reason alone, it may be considered inappropriate for application in remote communities. Current production models of wind turbines are still prone to frequent failures, and the scarcity of spare parts and qualified maintenance personnel results in prolonged periods of down-time and high maintenance costs. This is a reflection of the immaturity of the technology and must be overcome if forecasted reductions in production cost are to improve the competitive position of wind energy technology.

There is little cost data available upon which to base an assessment of the economic viability of large scale wind energy applications, and the life cycle cost analyses which have been published to date neglect maintenance and operating costs. The only observed exception to this is the analysis contained in the overview study for Saskatchewan.

Current capital costs for wind-powered turbine/generator sets appear to be in the range of $3,000 to $6,000 per kw. of installed capacity. However, costs determined in this manner are influenced by the site-specific wind regime and by the characteristics of the load they are to serve. A better cost model by virtue of its independence of the local conditions is as follows:3

Capital Cost = $300/M^2 of rotor area
+ $500 per kw. of installed
generator capacity

This model yields a capital cost of apprxoimately $4,200 per kw. for Burgeo and $6,900 for Plum Point.

Neglecting maintenance costs and assuming a 50% load factor, the Annual Equivalent Cost of energy would be $0.13 per kwh. for Burgeo and $0.21 per kwh. for Plum Point as compared to $0.25 for diesel generated electricity.

On the basis of capital cost only, wind energy shows some promise when compared to diesel generated electricity. However, the situation changes considerably when maintenance costs are included. The Saskatchewan Overview Study assumed a difference in maintenance cost between diesel and wind turbine generation of almost $1,000 per kw. per year. This would put the cost of energy at Burgeo at $0.58 per kwh. and $0.66 per kwh. at Plum Point. If we assume that the maintenance cost for the wind turbine is only four times that of diesel generation, the corresponding unit energy cost for Burgeo is $0.33 per kwh. and $0.41 for Plum Point. In neither case is wind energy competitive with diesel generation at $0.25 per kwh. If the wind turbine is

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[3] Dr.D.E.J. Wiggins, "Prospects for Solar and Wind Energy Utilization in Alberta," December 1978.

to be connected to the electric distribution system for the community, then these costs would rise by between $0.025 and $0.09 per kwh., depending on the technique employed.

Other factors affecting the adoption of wind energy technology are those of safety and liability insurance, particularly for individual residential applications, and in some areas of Newfoundland the problem of icing of the structure and the rotor due to freezing spray and freezing rain or sleet. Various components of the turbine assembly make audible and annoying noises, and improper shielding of the generators can cause RF interference and impair TV and radio reception in the area. The Nova Scotia Department of Energy strongly recommends that wind turbines not be installed in urban areas, and even in rural areas very serious consideration should be given to the safety and comfort of nearby residents.

The Province of Newfoundland and Labrador does, however, have substantial potential for the application of wind energy technology, and as the technology matures, it will undoubtedly find numerous applications in remote communities both at the individual user level and on a community scale.

3.7 HEAT RECOVERY, COGENERATION, DISTRICT HEATING

By definition these three technologies are interrelated.

Heat Recovery - recovery of waste heat from any process where heat is produced as a byproduct.

Cogeneration - the simultaneous generation of both electricity and heat.

District Heating - the distribution of heat from a central source to serve individual loads within a specified geographic area.

A heat recovery system which recovers heat from the cooling water of a diesel-electric generator and distributes it to one or more nearby buildings incorporates some of the same elements of both cogeneration and district heating technologies. For this reason, the three technologies are treated as a single entity in this study.

Based on BFL's experience in this area and upon the work of others, the recovery of waste heat from the cooling water of the diesel generating plant may be a viable option in some of these communities. As the economics of such systems are known to be sensitive to fluid pumping costs and to costs for interconnecting piping between the diesel plant and the load, a heating load of sufficient size (school, fish plant, etc.) must be located quite close to the diesel generating plant (usually within 500 feet). Because the economics of each potential application is sensitive to the factors mentioned above, extrapolation from other experiences is not an acceptable method of analysis. Consequently, each site must be examined in detail independently. From discussions with officials of Newfoundland and Labrador Hydro, the following locations were determined to have potential applications which may prove cost effective and therefore warrant closer examination.

Load Centre	Potential Application
Black Tickle	Fish Plant
Davis Inlet	School
Hopedale	Water Pipes
Mary's Harbour	Medical Clinic
Nain	School
Roddickton	Town Hall
Francois	Church
Change Islands	Church

3.8 GRID EXTENSIONS

From discussions with officials of Newfoundland and Labrador Hydro it was learned that there are no firm plans to interconnect any of the isolated diesel plants presently being operated by the Power Distribution District for the duration of the Remote Community Demonstration Program. Quite clearly, this situation could change over the next few years. If the situation does change, the most likely candidates for interconnection are Change Islands and Fogo Island.

3.9 CONSERVATION MEASURES

Attempts to analyze the potential for conservation measures in remote communities is severely limited owing to the lack of an information base. Given this present reality, it is clear that research must be undertaken at the community level in order to understand the potential for conservation in each sector.

The only information presently available on conservation-related issues is at an aggregated community level and relates to the residential sector only. This data base results from an annual survey undertaken by Newfoundland and Labrador Hydro which includes a sample of customers served by the isolated diesel plants. The results from the sample are representative only at an aggregated community level and cannot be said to be indicative of the situation in any one community. Given this qualification, the results of the 1983 survey can be summarized in point form as follows:

- 66% of respondents have attempted to reduce their energy consumption in the last 12 months.

- The methods undertaken by individuals to reduce their energy consumption levels can be summarized as follows:

Method	% Using Method
Installed insulation in ceilings	42.6%
Installed insulation in walls	26.9%
Installed insulation in basements	21.8%
Installed double or triple glazed windows	29.5%
Improved the efficiency of furnace	19.2%
Caulking and weather stripping	47.4%
Reduced lighting levels	61.5%
Reduced hot water consumption	56.4%
Turned down thermostats	62.8%
Used appliances less frequently	50.0%

- The number of people who took part in the CHIP program was 35% and the number of people who used the COSP program was 4.2%. The number of people who used both programs was quite small, only 3.4%. The most important statistic was that 57% of respondents had used neither program. Further, 65% of respondents said they did not intend to use the COSP program in the future, and 19% said they were unsure whether they would take advantage of the program in the future. For those individuals who had used both programs to date, 92% said they used the money for installing insulation. For the 15% of individuals who intend to use the COSP program in the future, 77% said they intended to spend the money on conversion to another energy source, i.e. wood.

-- When asked if they intended to install a wood stove or wood furnace in the future, 76% said they did not and 4% were unsure. The remaining 20% said they were intending to install one or the other of the options.

-- The main type of heating used in respondents' homes is summarized below:

Type	% Using Method
Electric	15.2%
Oil Furnace (hot water)	7.6%
Oil Furnace (forced air)	23.5%
Wood Furnace	14.3%
Wood Stove	23.5%
Other	5.0%
Oil/Wood Furnace	10.9%

-- The secondary or supplementary type of heating device used in respondents' homes is summarized below:

Type	% Using Method
Plug-in Portable Heater	8.4%
Electric Basewood Heater	14.3%
Oil Furnace (hot water)	5.9%
Oil Furnace (forced air)	15.1%
Oil Stove	10.1%
Wood Furnace	2.5%
Wood Stove	21.9%
Kerosene Portable Heater	3.4%
Fireplace	6.7%

-- The survey also showed that the majority of people (64%) cut their own wood, and that 71% of these individuals do so within 10 miles of their homes. The average consumption of wood is 8.25 cords per year or 12.4 pick-up loads.

-- The results also indicated that the lower income groups made more of an effort to reduce their energy consumption levels. Also, the results showed that households with full-time male employees tend to undertake conservation initiatives more often than households with unemployed males. There is also a trend which indicates that unemployed males tend to cut their own wood more than males employed full-time.

3.10 SLOWPOKE NUCLEAR REACTOR

One further alternative may soon exist for some of the larger communities. That alternative is the Slowpoke-3 nuclear reactor for which the conceptual design is now being completed at Atomic Energy of Canada Limited's Chalk River Nuclear Laboratories.

This reactor is based on the inherently safe Slowpoke research reactor currently employed for teaching and research at four Canadian universities and for industrial applications at two other Canadian laboratories. The reactor is inherently safe because there are no mechanical or chemical shutdown devices. Reactor cooling is by natural convection of water at atmospheric pressure. There are no safety rods, ionization chambers, start-up instruments, or coolant pumps. The reactor is turned on with a switch and reaches full power within a few minutes. The reactor power is regulated by a single motor-driven control rod responding to a signal from a self-powered neutron detector. Should this control system fail, the reactor power is safely limited by the design of the core. Such a failure has occurred only once in 30 reactor-years of operation.

Based on preliminary cost information available from Atomic Energy of Canada Limited, an electric power version of the Slowpoke-3 reactor would have an Annual Equivalent Cost of energy competitive with that of diesel generation.

While such plants would likely meet with considerable opposition from the general public, and it would be unrealistic to expect many communities to welcome a nuclear reactor within their boundaries except as a last resort, progress in the development of this technology warrants close monitoring.

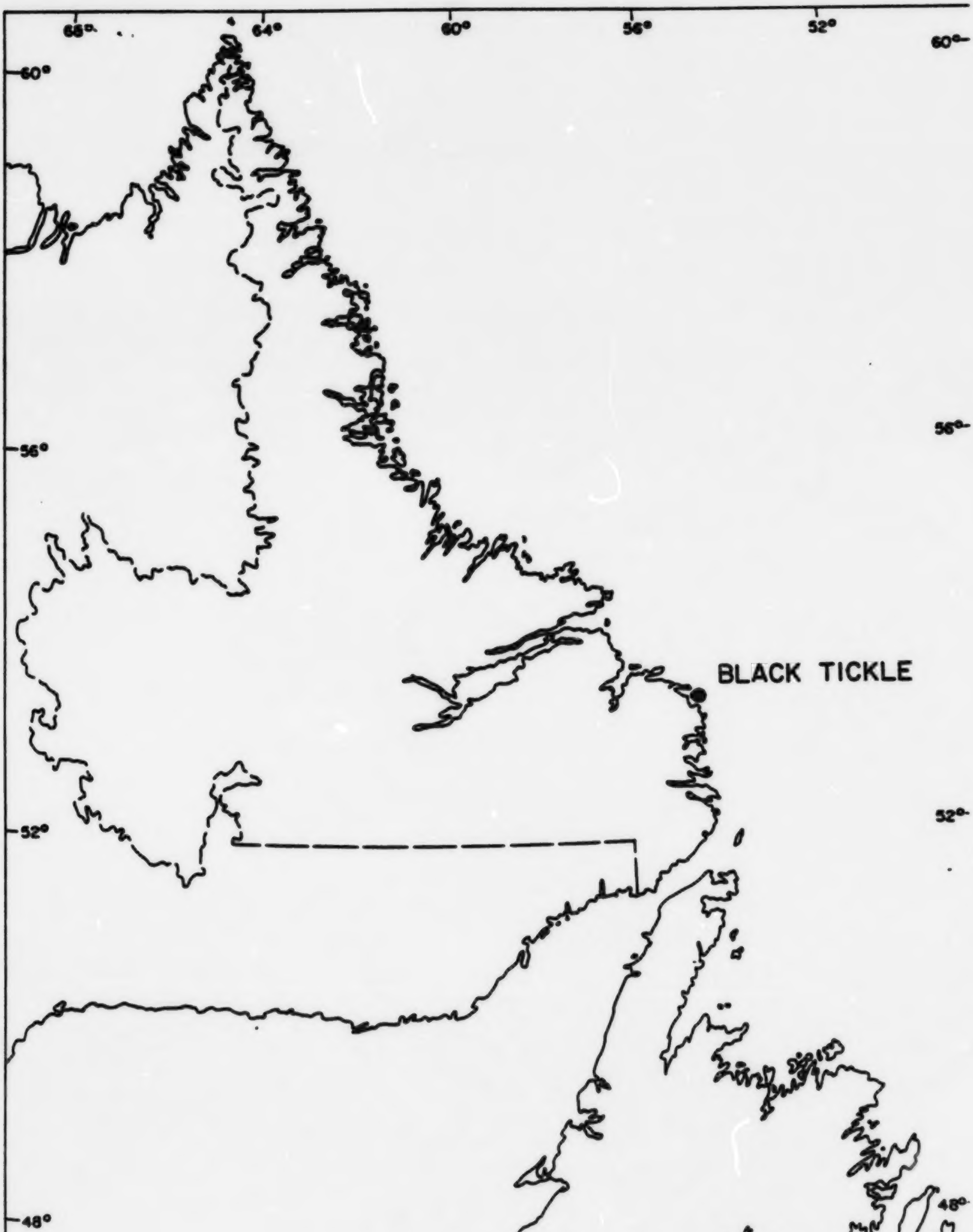
4.0 Profiles and Assessments by Load Centre and Community - Labrador

4.1 REMOTE COMMUNITY ANALYSIS

Load Center: Black Tickle, Labrador

Communities Serviced: Black Tickle, Domino

Comments: The diesel generating station at Black Tickle services the small community of Domino as well. The community of Domino is technically ineligible for RCDP funding as the total population in 1981 was only 11 persons.



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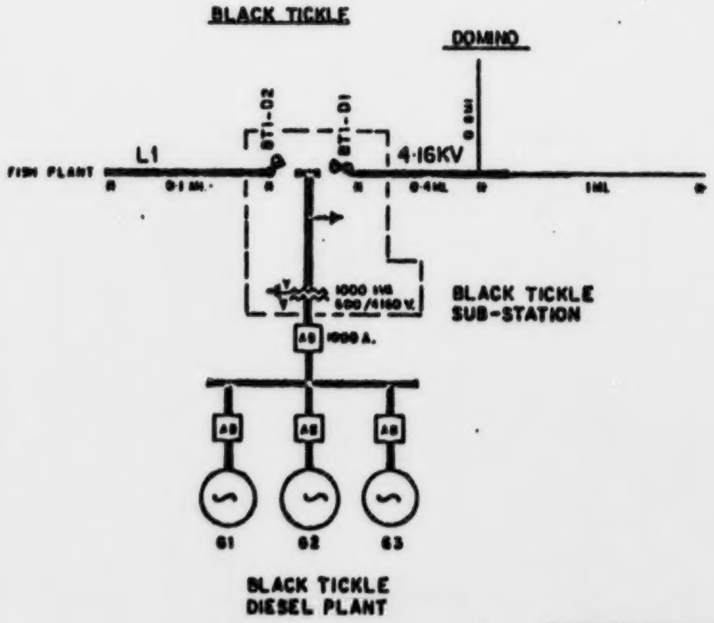
BLACK TICKLE
DOMINO
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G1
G2
G3
BLACK TICKLE SUB-STATION
BLACK TICKLE DIESEL PLANT

APPROVED BY: W.F.B.	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 OF
DATE: 80/03/04	BLACK TICKLE DISTRIBUTION SYSTEM	DWG No
REVISION No.: 2		408·

REMOTE COMMUNITY ANALYSIS

Community Profile: Black Tickle

Status: Incorporated

Location: Lat: 53° 28' N
Long: 55° 45' W

Sources of Information:

Publications and Articles

Arco Co. Ltd. and Colin Karasek Ltd., "Black Tickle Community Plan," May 1980.

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1981.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 198

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

A. History and Current Status

1. Black Tickle's original settlers came largely from the Conception Bay area. The community was a thriving fishery establishment around 1800.

   Located on rich fishing grounds, it is the only permanent community on the coast between Cartwright and Norman Bay. The community is completely dependent on the fishery; there are no forest resources and very few animals for hunting and trapping.

2. Demographics

1981 Population: 194

Historic Population

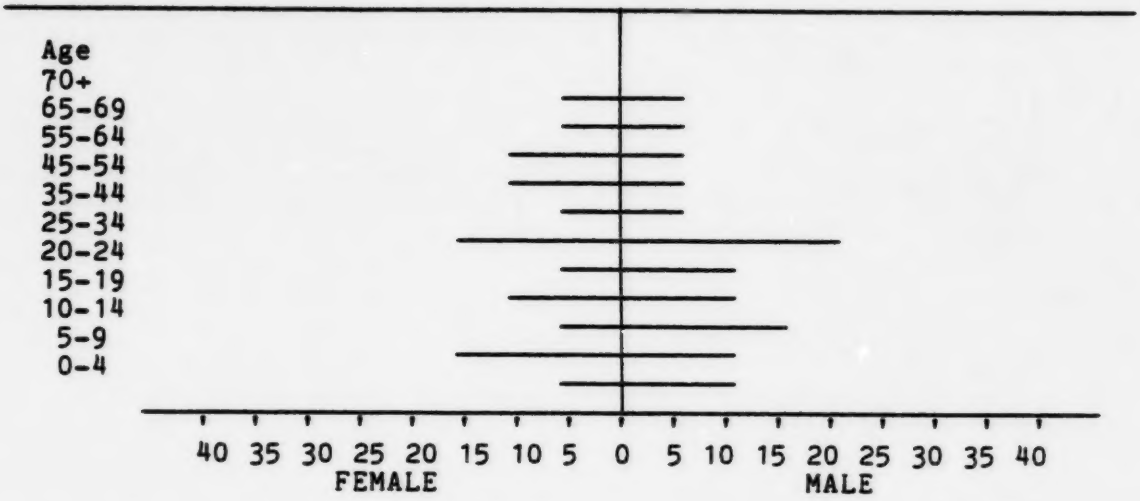
Year	Population	Increase	Growth %	Average Annual Growth %
1951	23			
1956	73	50	217	43.5
1961	30	-43	-59	11.8
1966	106	76	253	50.7
1971	164	58	55	10.9
1976	194	30	18	3.7
1981	194	0	0	0.0

Source note: Black Tickle Community Plan

Projected Future Population Growth:

At 2% per annum: 1986 - 213 1991 - 233

Population Structure by Age and By Gender - 1981*



No. of Females - 92 No. of Males - 102

Footnotes:

There is a fairly young population, with 68% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River X Wells X Other ____

Distribution:

Pipe X Truck ____ Individual Systems X None X

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks X Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes ____ No X
Other: Open Dump Yes X No ____

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Cartwright

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No

Size of Facility: 248.0^{2}M

Staff: Doctors: Nurses: 2

Other: visiting doctor from Cartwright

---

2. Education

School located in community: Yes X No

Grades: Kindergarten to Grade 8

Size: N/A Classrooms: 4 Teachers: 4

---

3. Residential*

(1) Number of occupied private dwellings: 42
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: very good & good, 43%; fair & poor, 57%
(4) Number of owned homes: 36
(5) Number of rented homes: 6
(6) Number of single detached homes: 42
(7) Number of single attached homes:
(8) Average number of persons per private household: 4.6
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

* Note: Figures were obtained by multiplying the total figure for that enumeration area by the community's population percentage of the enumeration area.

4. Community/Institutional/Commercial/Industrial Buildings

Community Hall

Church

Fish Plant

General Store

General Store

D. ECONOMIC ACTIVITIES

1. Fishery

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	limited reception
Radio	Yes X	No	limited reception
Telephone	Yes X	No	operator handled
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	scheduled & charter
Marine	CN Coastal Boats	scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 2 - 300 kw Cat. with B.B.C. Generators
1 - 250 kw Cat. with B.B.C. Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	301,418	312,760
Annual Fuel Cost	$89,615.00	$122,174.00
Cost per Litre	$0.30	$0.39
Cost Increase		30%

4. Electricity Demand - Historical and Predicted (mwh):

1980	900	1985	920
1981	895	1986	920
1982	898	1987	920
1983	920	1988	920
1984	920		

5. Peak Load Demand - Historical and Predicted (kw):

1980	240	1985	275
1981	270	1986	275
1982	270	1987	275
1983	275	1988	275
1984	275		

H. ASSESSMENT OF RESOURCES - Black Tickle, Domino

Small Scale Hydro Potential

Available information indicates there are no potential sites for small scale hydro developments in this area.

Wood Resources

The published data base on the inventory of fuelwood resources in this area is insufficient to formulate definitive conclusions about this alternative. The Statistics Canada data base for this area indicates approximately 35% of householders use wood as a principal heating fuel. The potential to increase the usage of wood as a primary or secondary fuel would require further study.

Peat Resources

No published fuel peat inventories are available for this area, and consequently no definitive conclusions can be made about this alternative.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is a fish plant within close proximity to the diesel plant in Black Tickle.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

There is no potential for small scale hydro developments in this area. The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to perform a serious evaluation of these options. More detailed research and analysis would have to be conducted before these options could be recommended or dismissed as contributors to heating or electrical generation requirements. The potential recovery of waste heat from the diesel plant for use at the fish plant in Black Tickle is a promising option and warrants further investigation.

1982 ENERGY PROFILE

LOAD CENTER: Black Tickle COMMUNITY: Black Tickle, Domino

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUEL (ton
Residential	340 185		152 749		
Commercial	13 595				
Industrial	299 520				
Government	31 721				
Street Lighting					
TOTAL	685 021		152 749		

1982 ENERGY PROFILE

LOAD CENTER: Black Tickle COMMUNITY: Black Tickle

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TO ((
Residential	1 225		5 756		3 162	10
Commercial	49					
Industrial	1 078					1
Government	114					
Street Lighting						
TOTAL	2 466		5 756		3 162	11

4.2 REMOTE COMMUNITY ANALYSIS

Load Center: Cartwright, Labrador
Communities Serviced: Cartwright, Labrador
Status: Incorporated Community
Location: Lat: 53° 42' N
Long: 57° 01' W

Sources of Information:

Publications and Articles

Arco Co. Ltd. and Colin Karasek Ltd., "Cartwright Municipal Plan," March 1981.

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1981.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 198

Royal Canadian Mounted Police, June 1983.

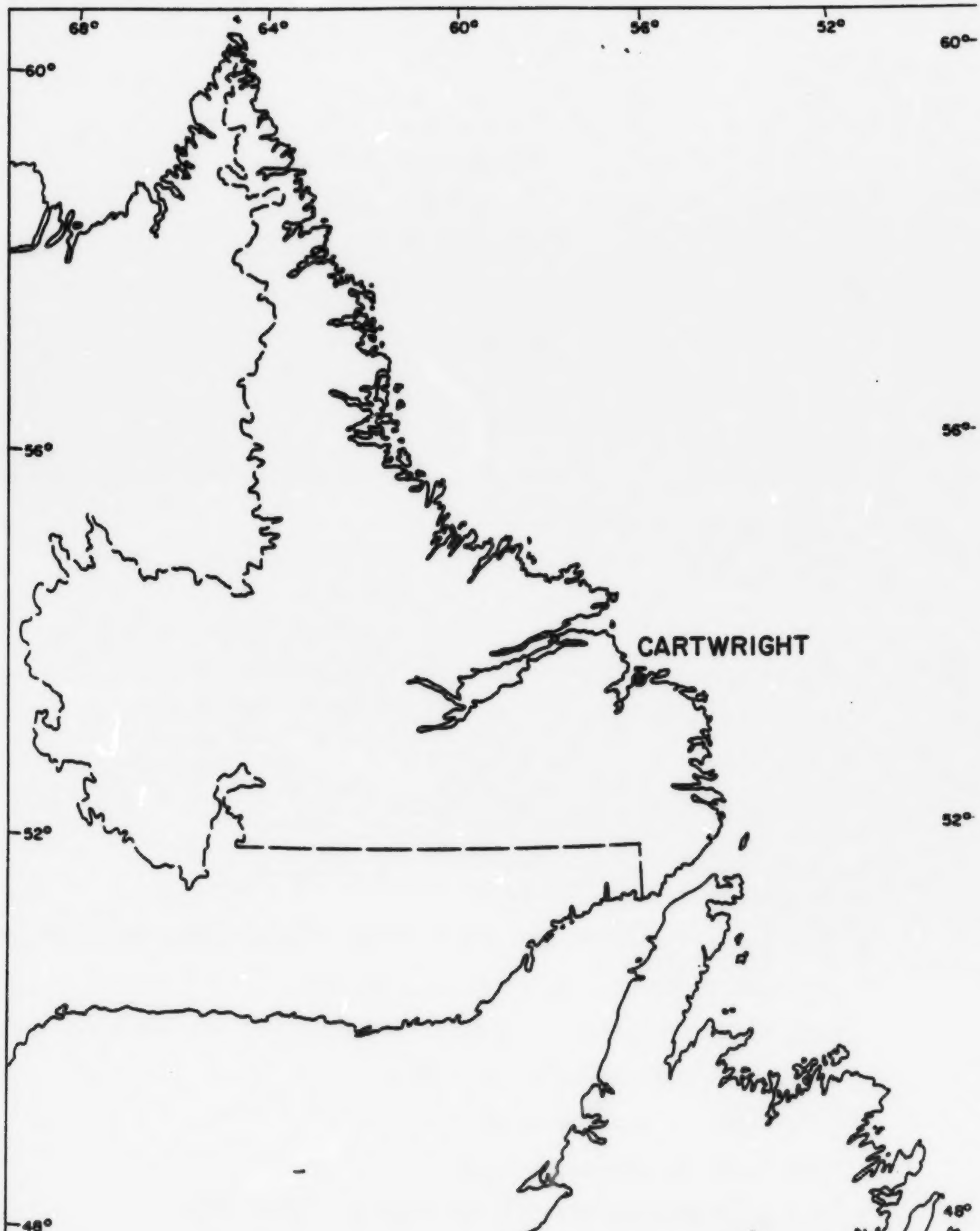
Department of Municipal Affairs and Housing, May and June 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.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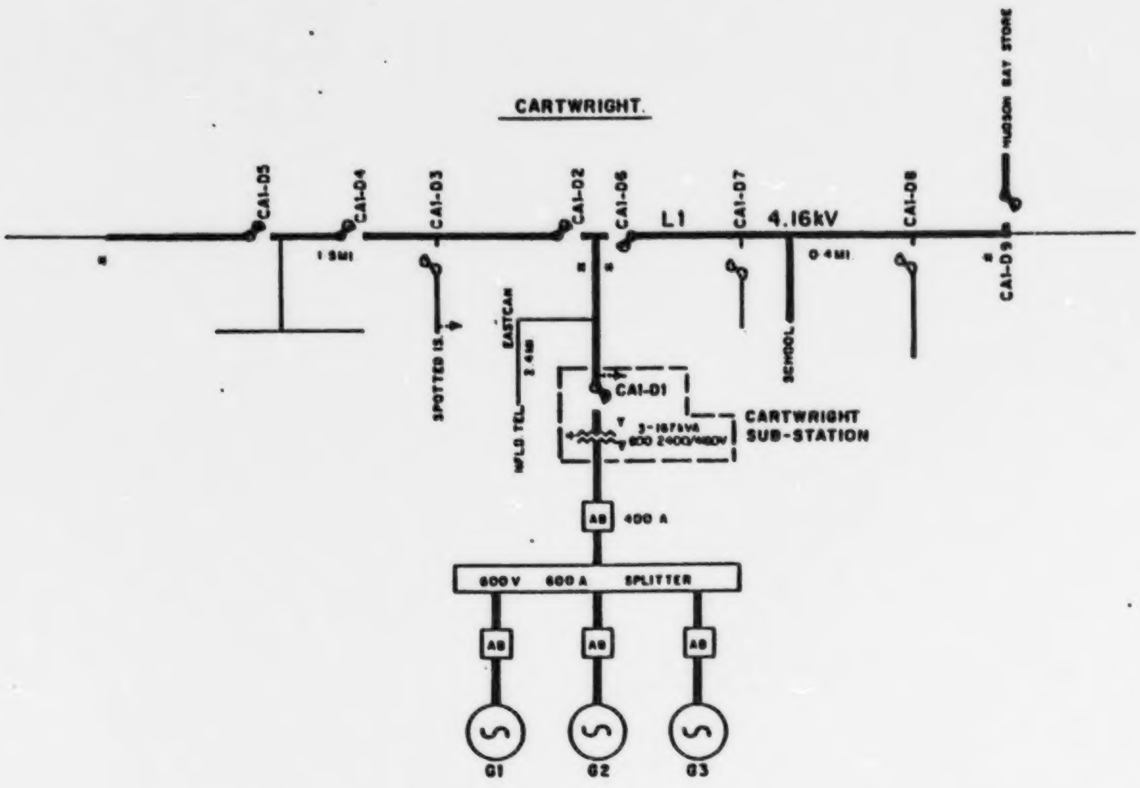
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CAI-D6
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0.4MI
SCHOOL
CAI-D8
CAI-D9
HUDSON BAY STORE
EASTCAN
2.4MI
NFLD. TEL.
CAI-D1
3-167kVA
600 2400/480V
CARTWRIGHT
SUB-STATION
AB
400 A
600 V
600 A
SPLITTER
AB
AB
AB
G1
G2
G3

APPROVED BY: W F R	NEWFOUNDLAND AND LABRADOR HYDRO		SH 1 of 1
DATE: 83-06-03	CARTWRIGHT DISTRIBUTION SYSTEM		DWG No 404-1
REVISION No.: 5			

A. History and Current Status

1. The community of Cartwright was first established by Captain George Cartwright when he moved his business headquarters from Cape St. Charles in 1775. It was chosen because of the strategic location, abundance of wood, wildlife and fresh water. In 1815 Captain Cartwright's business was sold to Hunt and Henley, and in 1973 it was purchased by its present owners, the Hudson's Bay Company.

The early settlers of Cartwright were employed by lumber companies and a salmon cannery. The community's existence today is a direct result of the Hudson's Bay Company's post which is still being maintained. During the summers, many of Cartwright's winter residents migrate to various salmon and cod fishing stations. The seasonal migratory patterns are still a very significant demographic factor in Cartwright.

In 1945 a major boost came to Cartwright when the American Radar Base opened. The Base is now closed, and the future development of Cartwright is leaning on the possibility of fish processing and spin-off from offshore oil and gas developments. Although there is now a scarcity of salmon and cod, it is possible that Cartwright could become a major shrimp processing center.

2. Demographics

1981 Population: 658

Historic Population[*]

Year	Population	Increase	Growth %	Average Annual Growth %
1945	183			
1951	244	61	33	5.5
1956	359	115	47	9.4
1961	493	134	37	7.4
1966	616	123	25	5.0
1971	752	136	22	4.4
1976	675	-77	-10	-2.0
1981	658	-17	-3	-0.6

Footnotes:

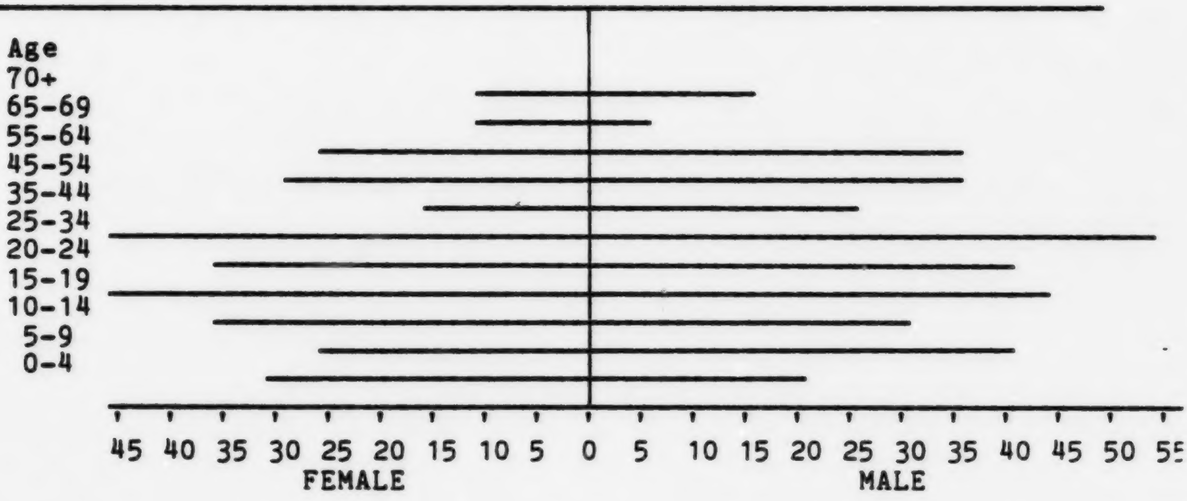
[*] The recent decline could be due to the poor state of the fishery, the closing of the radar base, and the lack of alternative local employment opportunities. Prospects for future growth are linked to an anticipated improvement in the fishery, fish processing, the possibility of spin-offs from offshore oil and gas, the boatbuilding industry, and the increasing emphasis of Cartwright as a regional center.

Source Note: Cartwright Municipal Plan

Projected Future Population Growth:

At 2% per annum: 1986 - 724 1991 - 790

Population Structure by Age and By Gender - 1981*



No. of Females - 304 No. of Males - 354

Footnotes:

* Over 65% of the population are under the age of 35. Over 80% are under 55. The fairly young population, therefore, presents potential for sustained population growth in the community

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells X Other a dam ponds water at a brook

Distribution:

Pipe X Truck X Individual Systems ____ None X

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination X

Fluoridation ____ None ____

---

2. Sewage

Collection System:

Pipe X Truck ____ Individual Systems X None X

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks X Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes ____ No X
Other: open dump Yes X No ____

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Cartwright

---

5. Fire Protection Organized

Organized: Yes X No ____

Equipment: one fire truck/hydrants

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No ____

Size of Facility: 433.7 M^2

Staff: Doctors: 1 Nurses: 2

Other: 2 nursing assistants

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 11

Size: N/A Classrooms: N/A Teachers: 15

---

3. Residential

(1) Number of occupied private dwellings: 165
(2) Number of houses with sewer and water: 14% have piped hot and cold water; 18% have toilets
(3) Housing condition: very good, 9%; good, 32%; fair, 36%; poor, 23%
(4) Number of owned homes: 140
(5) Number of rented homes: 25
(6) Number of single detached homes: 155
(7) Number of single attached homes: -
(8) Average number of persons per private household: 4.0
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 0
(11) Dwellings heated with stove or space heater: 90
(12) Dwellings heated by electric heat: 0
(13) Other: wood 40

---

4. Community/Institutional/Commercial/Industrial Buildings

Hudson's Bay Store
Fishery Products Ltd.
Crafts Centre
General Store
General Store
Confectionary Store
Confectionary Store
Confectionary Store
Mechanical Shop

Snack Bar
Canadian Coast Guard Residences
Church
Church
Church
Community Hall
Library
Recreation Centre

D. ECONOMIC ACTIVITIES

1. Fishery
2. Service Centre
3. Petro Canada Offshore Drilling Base

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	AOK 1V0
Television	Yes X	No	CBC from Newfoundlan
Radio	Yes X	No	CBC from Happy Valle
Telephone	Yes X	No	D.D.D.
High Frequency Radio	Yes X	No	

Operated By: Ministry of Transport

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	scheduled & charter
Marine	CN Coastal Boats	scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
1 - 300 kw Cat. with B.B.C. Generator
1 - 300 kw Cat. with Kato Generator
1 - 250 kw Cat. with B.B.C. Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	503,783	566,836
Annual Fuel Cost	$171,870.00	$223,698.00
Cost per Litre	$0.34	$0.39
Cost Increase		15%

4. Electricity Demand - Historical and Predicted (mwh):

1980	1318	1985	1918
1981	1473	1986	2079
1982	1516	1987	2254
1983	1634	1988	2442
1984	1770		

5. Peak Load Demand - Historical and Predicted (kw):

1980	354	1985	456
1981	348	1986	495
1982	378	1987	537
1983	387	1988	583
1984	420		

H. ASSESSMENT OF RESOURCES - Cartwright

Small Scale Hydro Potential

There is one possible site located approximately 3 km. from the nearest transmission line on an unnamed brook which for identification purposes has been called Cartwright Brook. The nominal capacity is estimated to be 325 kw. through a head of approximately 60 M.

Wood Resources

The published data base on the inventory of fuelwood resources in this area is insufficient to formulate definitive conclusions about this alternative. The Statistics Canada data base for this area indicates that approximately 65% of householders use wood as a primary heating source. The potential to increase the use of wood as a primary or secondary fuel requires further study.

Peat Resources

No published fuel peat inventories are available for this load centre, and consequently no definitive conclusions can be made about this alternative.

Wind Resources

The Atmospheric Environment Service maintains mean annual wind speed records for Cartwright. The nominal yearly energy production estimate is 430 kwh. per square meter of swept area. This information of itself is insufficient to enable definitive conclusions to be made about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

A small scale hydro development on Cartwright Brook appears to be a promising alternative to diesel generated electricity. The capital cost for such a development is estimated to be between $688,000 and $1 million, with an Annual Equivalent Cost of energy of approximately $0.20 per kwh. as compared to $0.25 for diesel-generated electricity.

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Cartwright **COMMUNITY:** Cartwright

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWO (tonne
Residential	830 832		321 863		2 7
Commercial	109 445				
Industrial	57 120				
Government	267 953				
Street Lighting	10 692				
TOTAL	1 276 042		321 863		2 7

1982 ENERGY PROFILE

LOAD CENTER: Cartwright COMMUNITY: Cartwright

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	2 991		12 128		22 363	37 482
Commercial	394					394
Industrial	206					206
Government	965					965
Street Lighting	38					38
TOTAL	4 594		12 128		22 363	39 085

4.3 REMOTE COMMUNITY ANALYSIS

Load Centre: Charlottetown, Labrador

Communities Serviced: Charlottetown

Status: Unincorporated

Location: Lat: 52° 29' N

Long: 55° 51' W

Sources of Information:

Publications and Articles

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1981.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 198

Royal Canadian Mounted Police, June 1983.

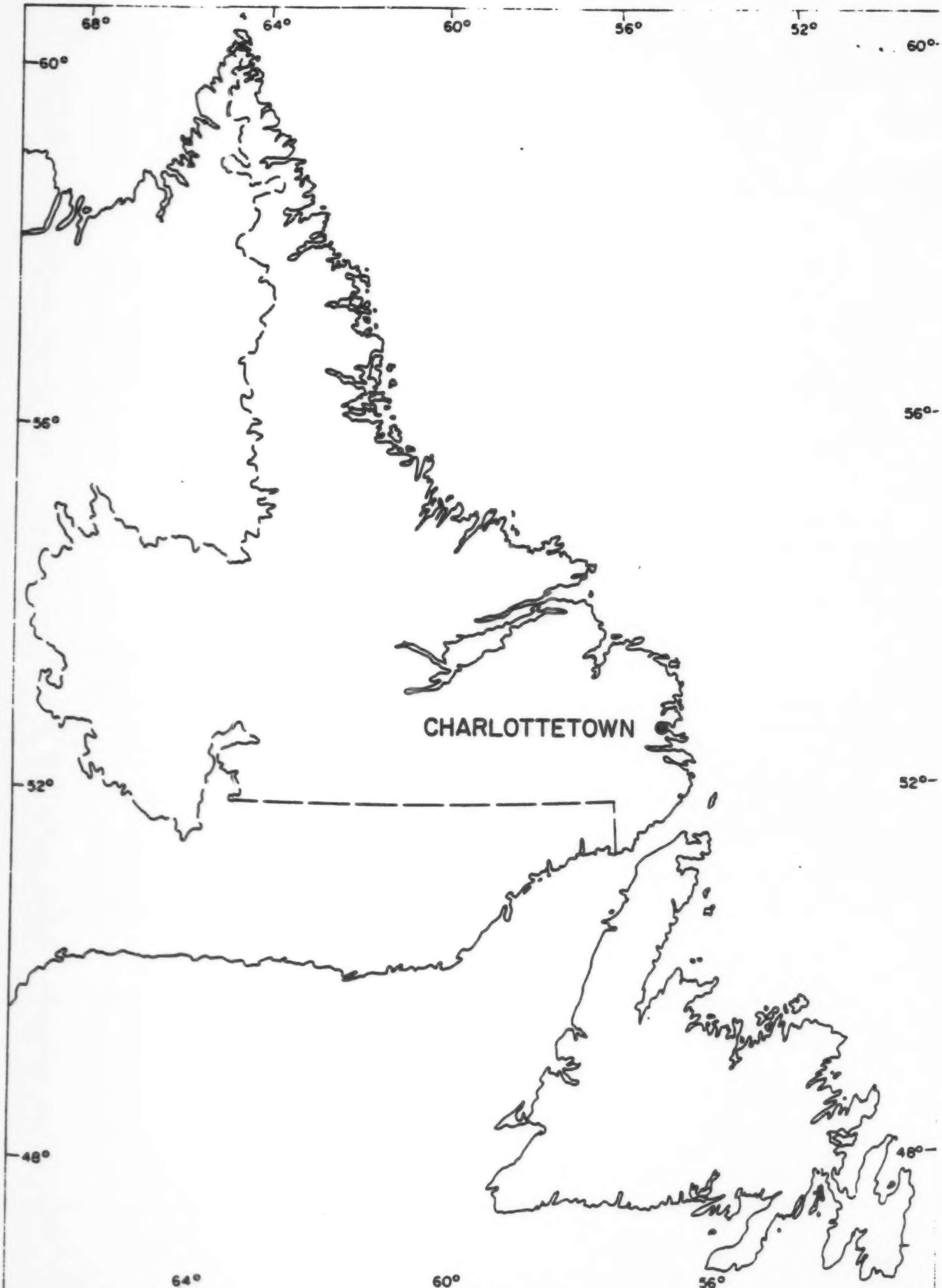
Department of Municipal Affairs and Housing, May and June 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.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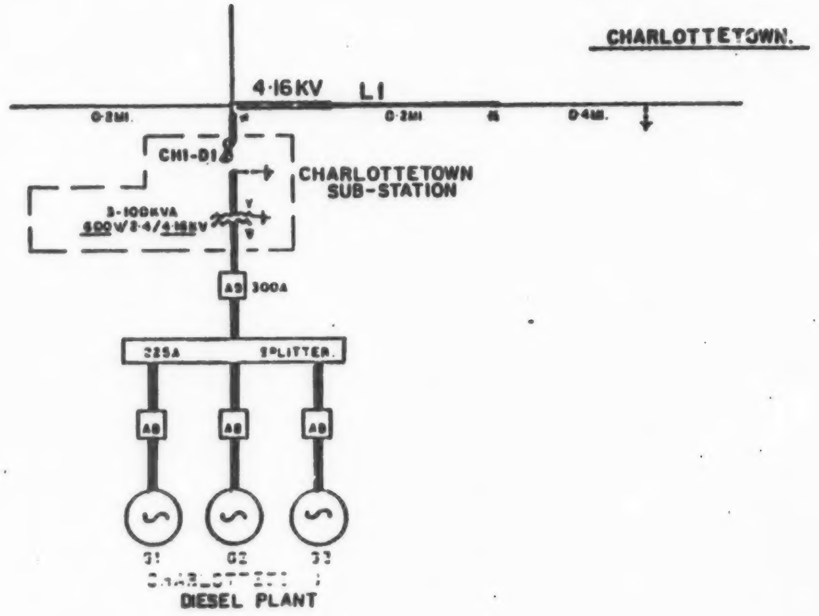
CHARLOTTETOWN.
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CH1-D1
CHARLOTTETOWN
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3-100KVA
600V/2·4/4·16KV
AS
300A
225A
SPLITTER.
AB
AB
AB
G1
G2
G3
DIESEL PLANT

APPROVED BY: W.F.R	NEWFOUNDLAND AND LABRADOR HYDRO	SH.
DATE: 83-01-07	CHARLOTTETOWN DISTRIBUTION SYSTEM	DW 3
REVISION No.: 2		

A. History and Current Status

1. Charlottetown was established by Ben Powell and Clarence Perry when they began a saw mill about 29 years ago. The majority of the residents moved there from Square Islands. The present economic base is the fishery.

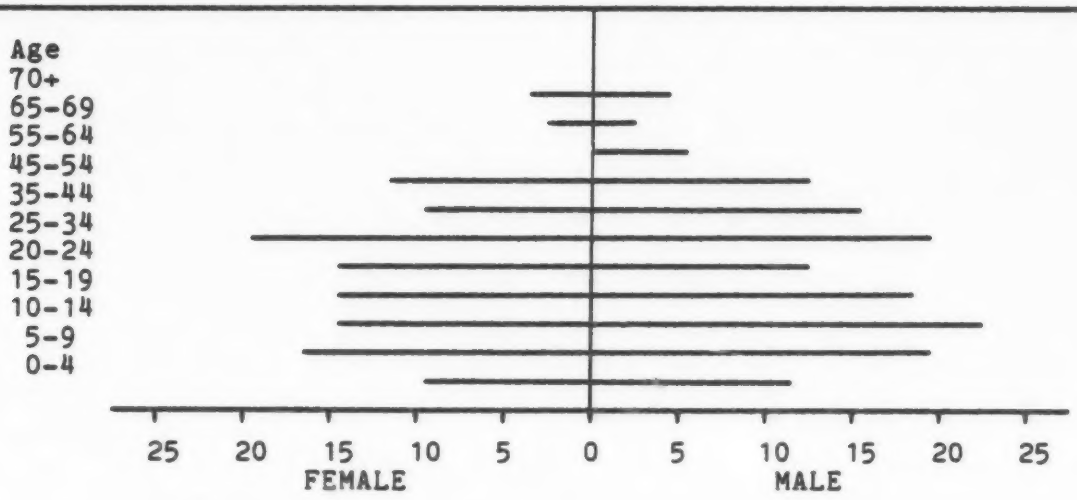
2. **Demographics**

1981 Population: 250

Projected Future Population Growth:

At 2% per annum: 1986 - 275 1991 - 300

Population Structure by Age and By Gender - 1981



No. of Females - 111 No. of Males - 139

Footnotes

There is a fairly young population. Seventy-five percent is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River __X__ Wells __X__ Other ____No____

Distribution:

Pipe __X__ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__ Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None __X__

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon ____ Septic Tanks __X__ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes __X__ No ____
Landfill Site Utilized: Yes ____ No __X__
Other: __open dump__ Yes __X__ No ____

A. History and Current Status

1. Charlottetown was established by Ben Powell and Clarence Perry when they began a saw mill about 29 years ago. The majority of the residents moved there from Square Islands. The present economic base is the fishery.

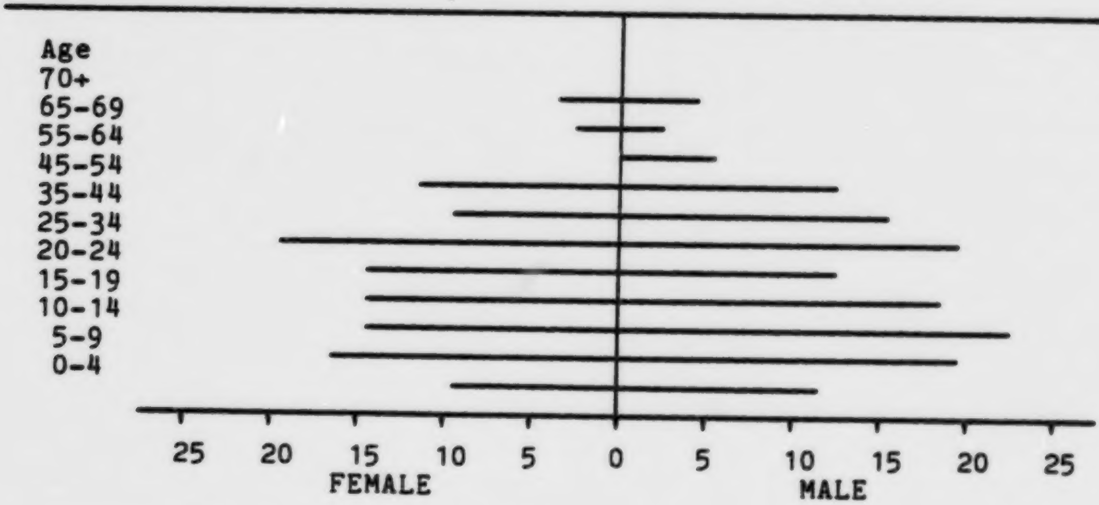
2. Demographics

1981 Population: 250

Projected Future Population Growth:

At 2% per annum: 1986 - 275 1991 - 300

Population Structure by Age and By Gender - 1981



No. of Females - 111 No. of Males - 139

Footnotes

There is a fairly young population. Seventy-five percent is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River __X__ Wells __X__ Other ____No____

Distribution:

Pipe __X__ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__ Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None __X__

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon ____ Septic Tanks __X__ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes __X__ No ____
Landfill Site Utilized: Yes ____ No __X__
Other: ___open dump___ Yes __X__ No ____

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Mary's Harbour

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No ____

Size of Facility: 158.4 M^2

Staff: Doctors: ____ Nurses: 1

Other: No

---

2. Education

School located in community: Yes 2 No ____

Grades: Kindergarten to Grade 11;
Kindergarten to Grade 11

Size: N/A Classrooms: N/A Teachers: 2/5

3. Residential

(1) Number of occupied private dwellings: 49
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 44
(5) Number of rented homes: 5
(6) Number of single detached homes: 46
(7) Number of single attached homes: 3
(8) Average number of persons per private household: 5.2
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: ________ N/A

4. Community/Institutional/Commercial/Industrial Buildings

General Store
General Store
General Store
Gymnasium

D. ECONOMIC ACTIVITIES

1. Fishery

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	CBC, poor reception
Telephone	Yes X	No	operator handled
High Frequency Radio	Yes	No X	

Operated By: ________

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	Scheduled and Charter
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles		X	
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 1 - 60 kw Deutz with Tamper Generator
2 - 36 kw Cat. with B.B.C. Generators

3. **Diesel Fuel Consumption**:

	1981	1982
Annual Fuel Use (litres)	167,034	172,300
Annual Fuel Cost	$56,782.00	$67,678.00
Cost per Litre	$0.34	$0.39
Cost Increase		15%

4. **Electricity Demand - Historical and Predicted (mwh)**:

1980	400	1985	448
1981	403	1986	458
1982	418	1987	469
1983	427	1988	480
1984	437		

5. **Peak Load Demand - Historical and Predicted (kw)**:

1980	130	1985	155
1981	142	1986	159
1982	144	1987	163
1983	147	1988	167
1984	151		

H. ASSESSMENT OF RESOURCES - Charlottetown

Small Scale Hydro Potential

There are two possible sites located on two unnamed rivers within 7 km. of the nearest transmission line. The closer site is located 4.3 km. from the community on a river fictitiously named Northwest Brook. The nominal capacity is 400 kw. through a head of approximately 12 M. The further site, located 7 km. from the community on a river named Southeast Brook for identification purposes, has a nominal capacity of 85 kw. through a head of approximately 5 M.

Wood Resources

The published data base on the inventory of fuelwood resources in this area is insufficient to formulate definitive conclusions about this alternative. The Statistics Canada data base indicates that approximately 41% of householders use wood as a primary fuel. The potential to increase the use of wood as a primary or secondary fuel requires further study.

Peat Resources

No published fuel peat inventories are available for this area, and consequently no definitive conclusions can be made about this alternative.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evalute conservation options.

Assessment

Small scale hydro development in the Charlottetown area does not appear to be economically viable. The most promising site has an Annual Equivalent Cost of $0.44 per kwh. compared with $0.25 for diesel-generated electricity.

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Charlottetown   COMMUNITY: Charlottetown

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOO (tonnes
Residential	305 911		158 204		52
Commercial	29 684				
Industrial					
Government	30 895				
Street Lighting	6 633				
TOTAL	373 123		158 204		52

1982 ENERGY PROFILE

LOAD CENTER: Charlottetown COMMUNITY: Charlottetown

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 101		5 961		4 222	11 284
Commercial	107					107
Industrial						
Government	111					111
Street Lighting	24					24
TOTAL	1 343		5 961		4 222	11 526

4.4 REMOTE COMMUNITY ANALYSIS

Load Center: Davis Inlet, Labrador

Communities Serviced: Davis Inlet, Labrador

Status: Incorporated

Location: Lat: 55° 54' N

Long: 60° 57' W

Sources of Information:

Publications and Articles

DPA Consulting Ltd., "Community of Davis Inlet, Labrador, Municipal Plan," July 1980.

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1981.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 19

Royal Canadian Mounted Police, June 1983.

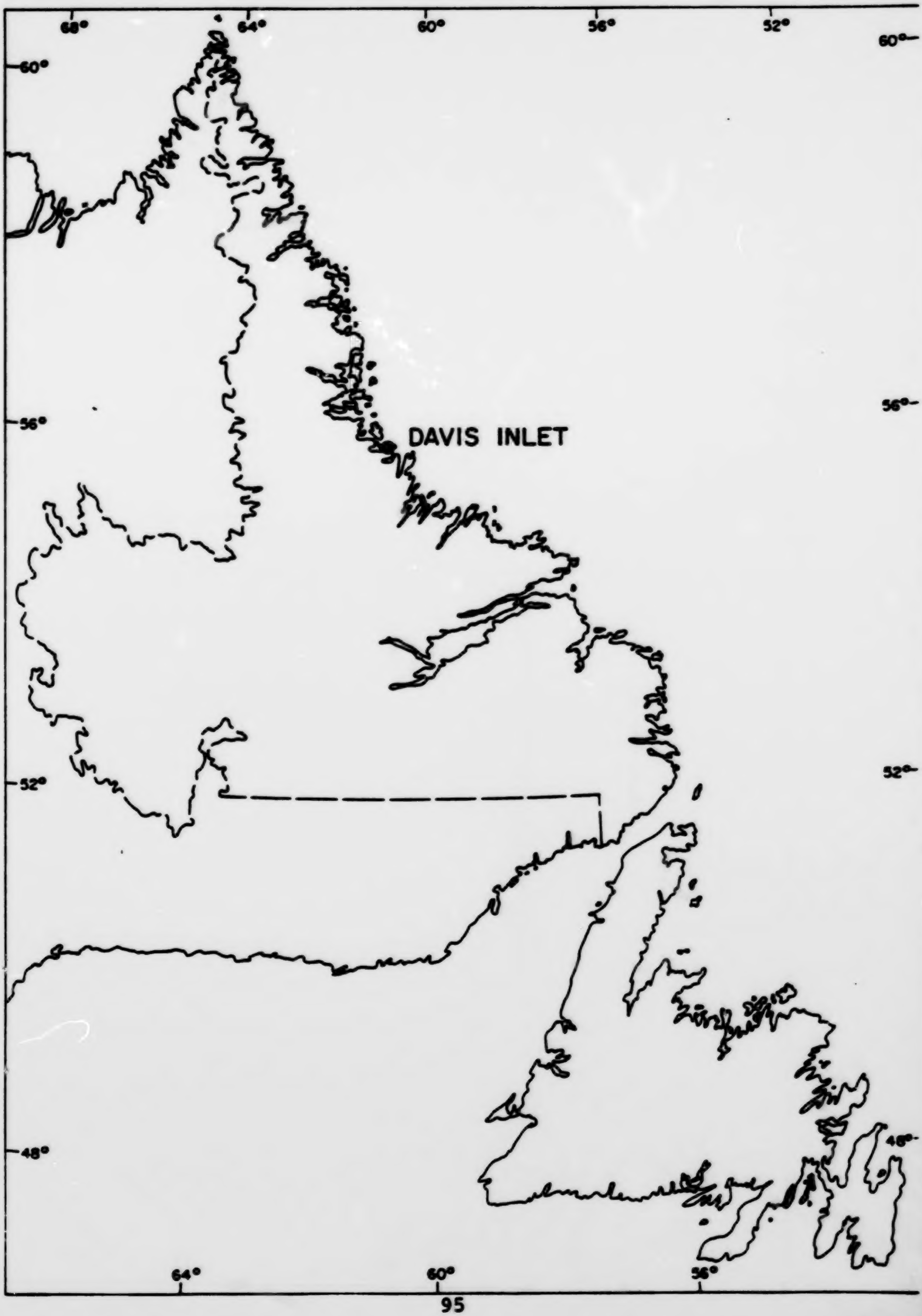
Department of Municipal Affairs and Housing, May 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.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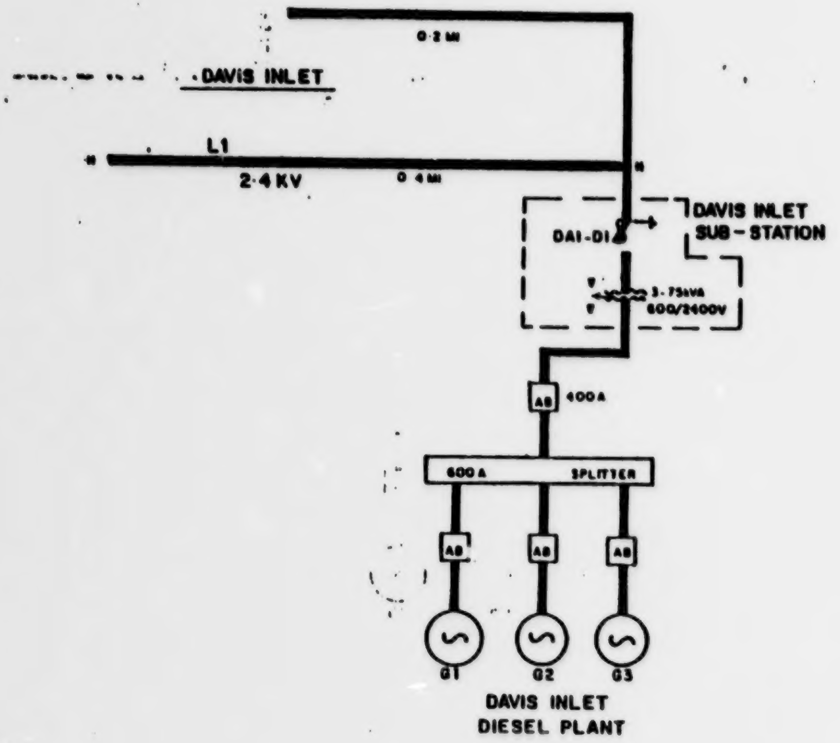
DAVIS INLET
0.2 MI
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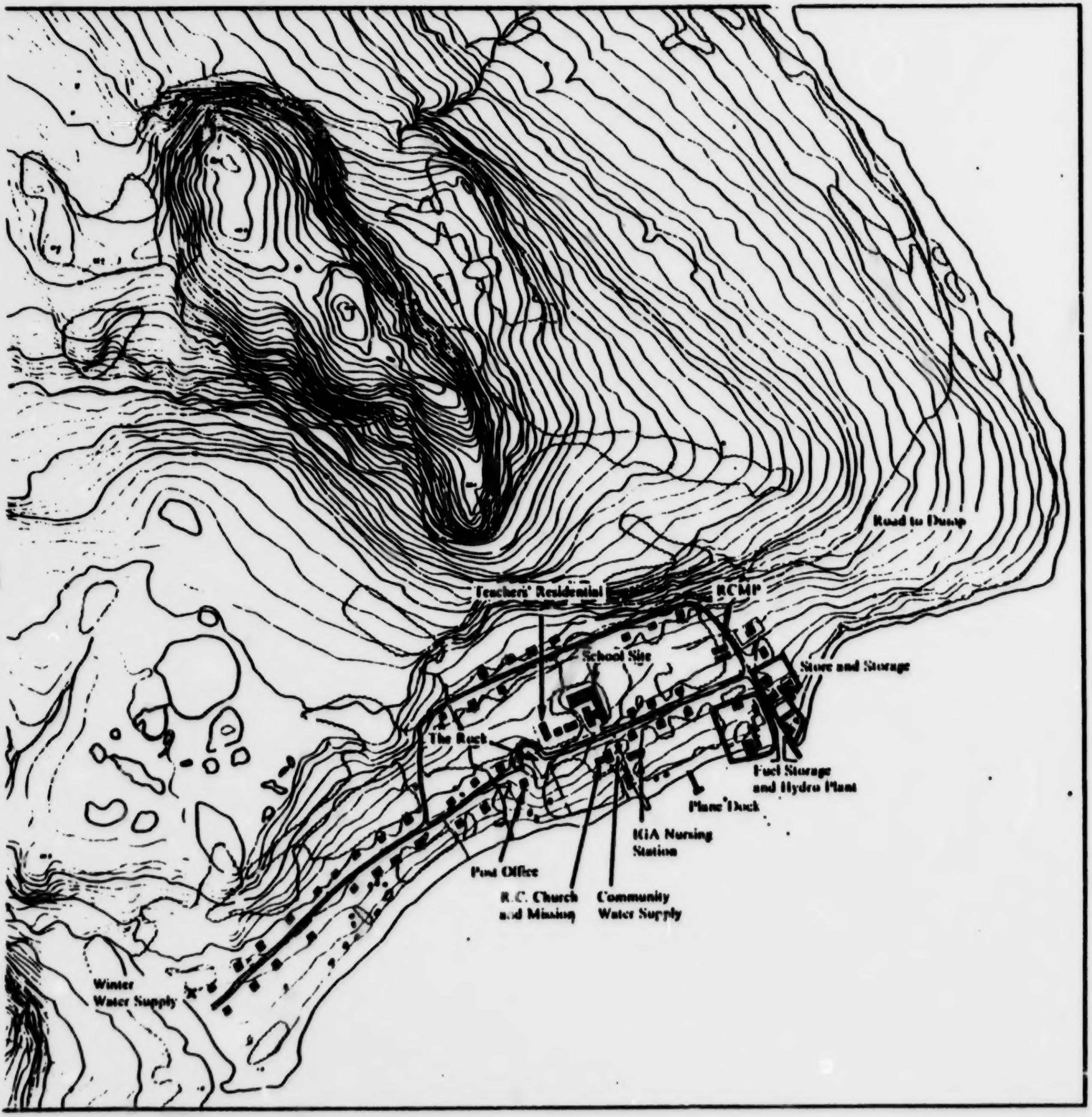
600/2400V
AB
400A
600A
SPLITTER
AB
AB
AB
G1
G2
G3
DAVIS INLET
DIESEL PLANT

APPROVED BY: W.F.R	NEWFOUNDLAND AND LABRADOR HYDRO	
DATE: 83-06-03	DAVIS INLET DISTRIBUTION SYSTEM	DWG. No. 405-
REVISION No.: 4		

new 405-1 414-


Road to Dump
Teachers' Residential
RCMP
School Site
Store and Storage
The Rock
Fuel Storage
and Hydro Plant
Plane Dock
KIA Nursing
Station
Post Office
R.C. Church
and Mission
Community
Water Supply
Winter
Water Supply

Existing Land Use
Map No. 3
Davis Inlet, Labrador

100 0 100 200
meters

Prepared for
The Community of
Davis Inlet, Labrador,
and the Department of
Municipal Affairs and
Housing.

Prepared by
DPA Consulting Limited
In association with
Project Management and
Design (1974) Limited

A. History and Current Status

1. Davis Inlet was named after John Davis, an Englishman in search of the North West Passage in 1586. In 1831, A. B. Hunt and Company established a trading post at Davis Inlet. The Hudson's Bay Company bought the trading post in 1869, and the provincial government took over in 1942. In 1945, the Oblate missionaries started a church in Davis Inlet. By 1967 the original town consisted of a church, four houses and thirty-one tents. By 1968, thirty-three houses had been built. At present, fishing, sealing, hunting and trapping constitute the economic base of the community.

2. Demographics

1981 Population: 240

Historic Population

Year	Population	Increase	Growth %	Average Annual Growth %
1971	193			
1976	274	81	41.9	8.3
1981	240	-34	-12.4	-7.4

Footnotes:

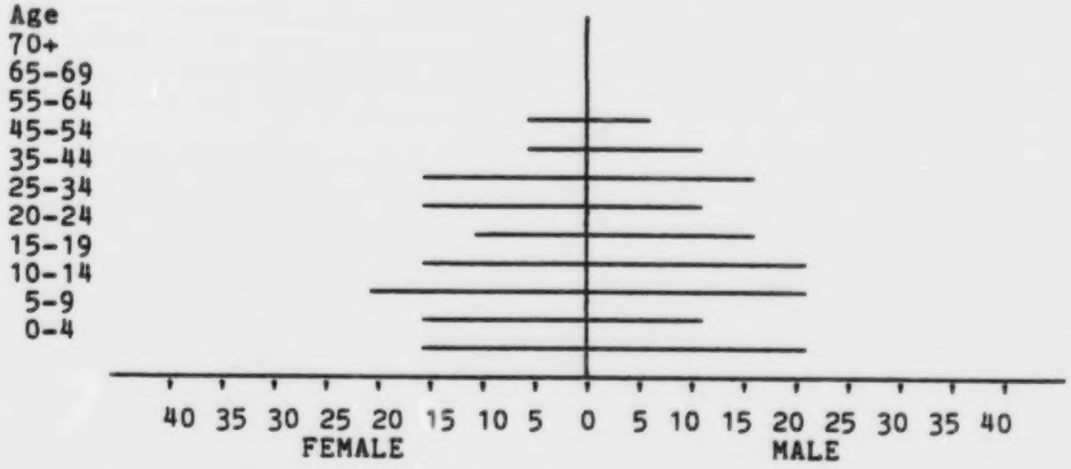
Overall population growth is projected to slow down to an average of 1.5 to 2% per year following 1986.

Source Note: Davis Inlet Municipal Plan, July 1980.
1981 Census of Canada.

Projected Future Population Growth:

1986 - 400 2000 - 525

Population Structure by Age and By Gender - 1981



No. of Females - 120   No. of Males - 120

Footnotes:

Over 65% of the population is under the age of 25; therefore there is potential for future population growth.

Source Note: 1981 Census of Canada

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells X Other No

Distribution:

Pipe X Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems ____ None __X__

Serving:

Government Buildings ____ Commercial Buildings ____ Residences ____

Disposal:

Lagoon ____ Septic Tanks ____ Treatment Plant ____ None __X__

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes ____ No __X__
Landfill Site Utilized: Yes __X__ No ____
Other: Yes ____ No __X__

---

4. Police Protection

R.C.M.P.: Yes __X__ No ____

Patrolled from: Davis Inlet

---

5. Fire Protection Organized

Organized: Yes ____ No __X__

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No ____

Size of Facility: 267.6 M^2

Staff: Doctors: ____ Nurses: 2

Other: visiting dentist and social worker

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 9

Size: N/A Classrooms: N/A Teachers: 10

---

3. Residential

(1) Number of occupied private dwellings: 45
(2) Number of houses with sewer and water: ____
(3) Housing Condition: 30, very good; 10 need minor repairs; 5 need major repairs
(4) Number of owned homes: 30
(5) Number of rented homes: 10
(6) Number of single detached homes: 40
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 5.4
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 15
(11) Dwellings heated with stove or space heater: 15
(12) Dwellings heated by electric heat: 0
(13) Other: Wood 15

4. Community/Institutional/Commercial/Industrial Buildings

Church

Warehouse

General Store

Gymnasium

Labrador Services Store

Community Bath House

Craft Centre

D. ECONOMIC ACTIVITIES

1. Fishing
2. Sealing
3. Hunting and Trapping

E. COMMUNICATION LINKS

					Comments
Post Office	Yes	X	No		local
Television	Yes	X	No		pirate taped CBC
Radio	Yes	X	No		sporadic CBC
Telephone	Yes	X	No		operator handled
High Frequency Radio	Yes		No	X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	scheduled & charter
Marine	CN Coastal Boats	scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles		X	
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 1 - 75 kw Deutz with Tamper Generator
2 - 136 kw Cat. with B.B.C. Generators

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	201,206	190,080
Annual Fuel Cost	$68,063.00	$74,625.00
Cost per Litre	$0.34	$0.39
Cost Increase		15%

4. Electricity Demand - Historical and Predicted (mwh):

1980	422	1985	630
1981	425	1986	690
1982	468	1987	757
1983	524	1988	831
1984	574		

5. Peak Load Demand - Historical and Predicted (kw):

1980	112	1985	150
1981	105	1986	165
1982	108	1987	182
1983	124	1988	200
1984	137		

ASSESSMENT OF RESOURCES - Davis Inlet

Small Scale Hydro Potential

Available information indicates that there are no potential sites for hydro developments in this area.

Wood Resources

There are no published inventories or forestry capability maps for Davis Inlet; however, BFL Consultants has first-hand knowledge of the area. Much of the low-lying countryside is covered with a mature black spruce forest. Tree spacing is generally very wide, and the local inhabitants have placed a heavy demand on nearby forests. A large tract of forest to the northeast of the community has recently been destroyed to make way for an airstrip and access road. The Crown owns the timber rights. The Statistics Canada data base indicates that approximately 45% of householders use wood as a primary heating fuel. The potential to increase the use of wood as a primary and secondary fuel would require further study.

Peat Resources

No published fuel peat inventories are available for this area, and consequently no definitive conclusions can be made about this alternative.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that the school is a potential candidate for heat recovery.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

The flat topography of the area surrounding Davis Inlet precludes consideration of small scale hydro development.

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

The school in Davis Inlet is a potential candidate for waste heat recovery from the cooling water of the diesel generating plant. It is located relatively close to the plant and could be retrofitted with the necessary equipment. This alternative warrants closer investigation.

1982 ENERGY PROFILE

LOAD CENTER: Davis Inlet COMMUNITY: Davis Inlet

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWO (tonne
Residential	340 742		136 383		5
Commercial					
Industrial					
Government	57 483				
Street Lighting	5 940				
TOTAL	404 165		136 383		5

1982 ENERGY PROFILE

LOAD CENTER: Davis Inlet COMMUNITY: Davis Inlet

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 227		5 139		4 222	10 588
Commercial						
Industrial						
Government	207					207
Street Lighting	21					21
TOTAL	1 455		5 139		4 222	10 816

4.5 REMOTE COMMUNITY ANALYSIS

Load Center: Hopedale, Labrador

Communities Serviced: Hopedale, Labrador

Status: Incorporated

Location: Lat: 55° 28' N

Long: 60° 13' W

Sources of Information:

Publications and Articles

DPA Consulting Ltd., "Community of Hopedale, Labrador, Municipal Plan," revised 1983.

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1981.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 198

Royal Canadian Mounted Police, June 1983.

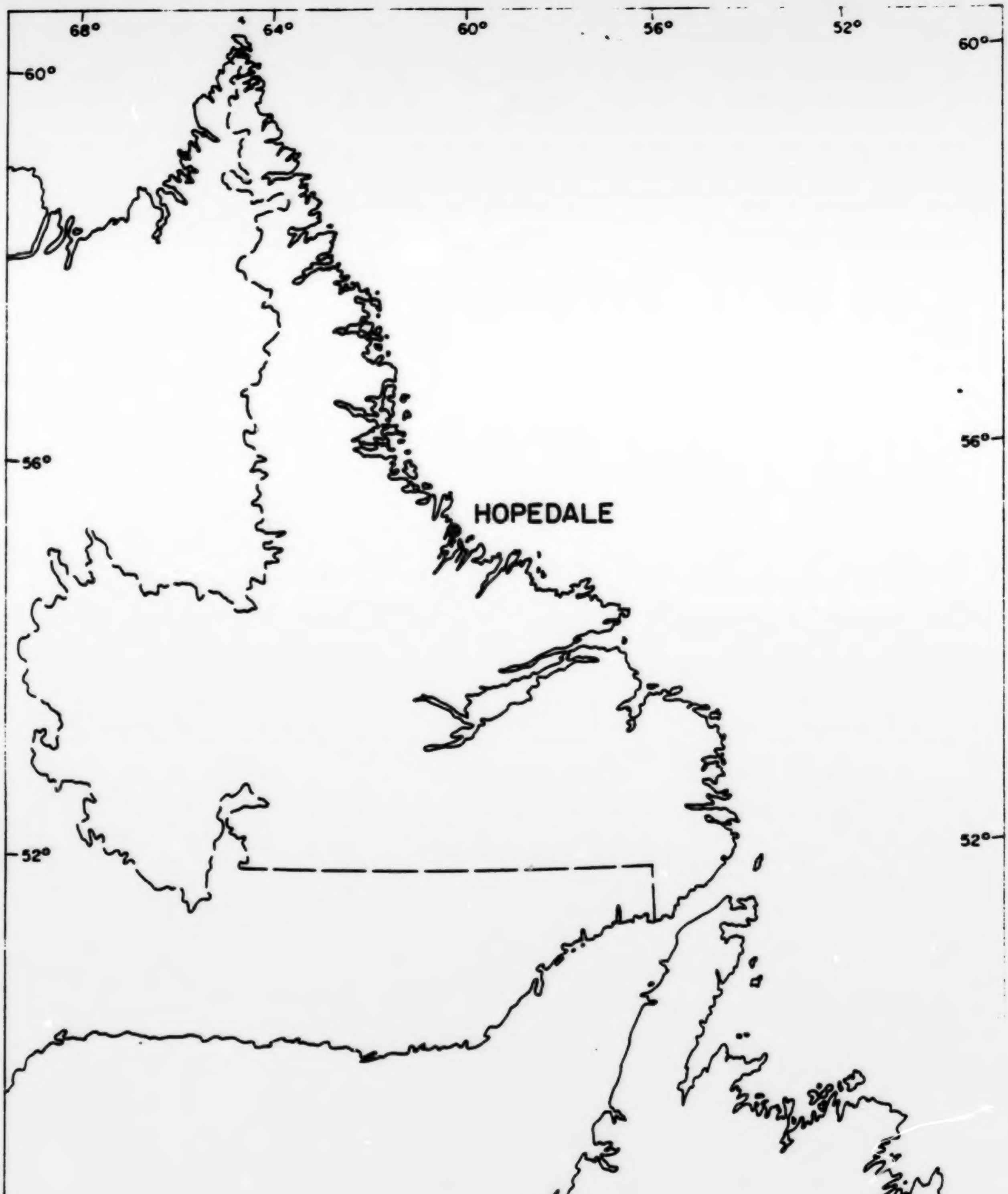
Department of Municipal Affairs and Housing, May 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.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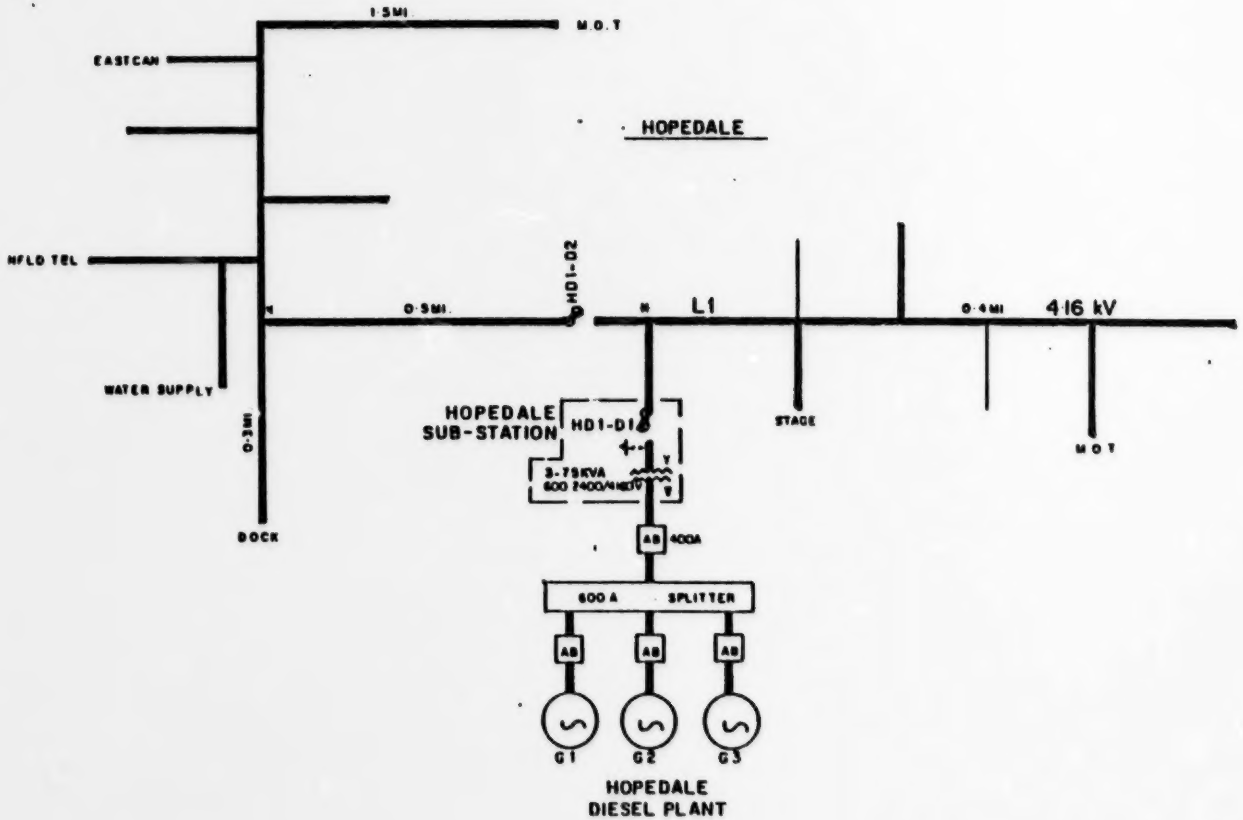
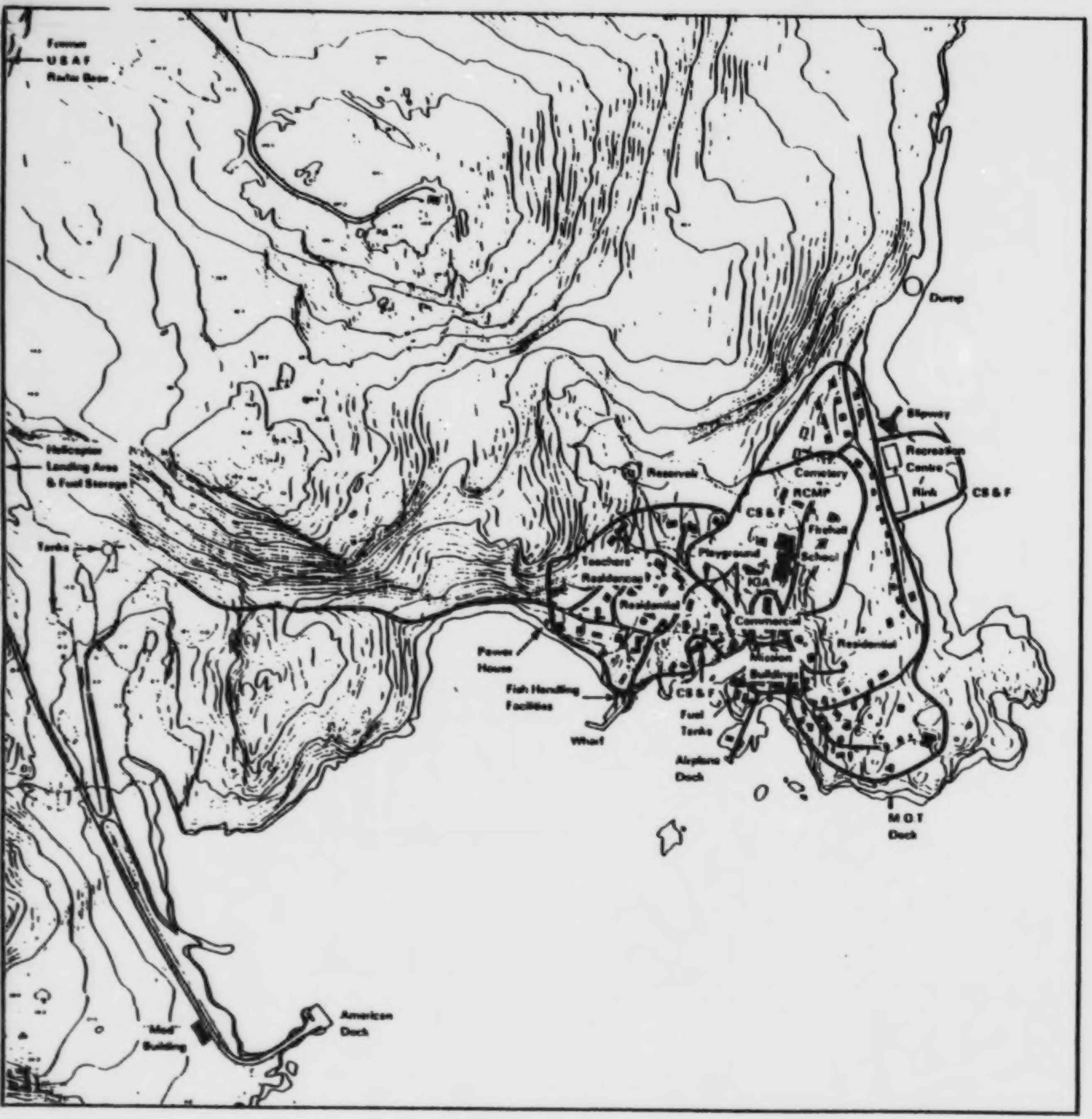
HOPEDALE


HOPEDALE
1·5MI
M.O.T
EASTCAN
NFLD TEL
WATER SUPPLY
0·3MI
DOCK
0·5MI.
HD1-D2
L1
0·4MI
4·16 kV
STAGE
M.O.T
HOPEDALE
SUB-STATION
HD1-D1
3-75KVA
600 2400/4160V
Y
AB
400A
600 A
SPLITTER
AB
AB
AB
G1
G2
G3
HOPEDALE
DIESEL PLANT

APPROVED BY: WER	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 OF 1
DATE: 83-06-03	HOPEDALE DISTRIBUTION SYSTEM.	DWG No 406-1
REVISION No: 3		

413-1


Former
U S A F
Radar Base
Helicopter
Landing Area
& Fuel Storage
Tanks
Dump
Slipway
Recreation
Centre
/
Rink
CS & F
Reservoir
Cemetery
RCMP
CS & F
Firehall
School
Playground
IGA
Teachers'
Residences
Residential
Commercial
Mission
Buildings
Residential
Power
House
Fish Handling
Facilities
Wharf
CS & F
Fuel
Tanks
Airplane
Dock
M O T
Dock
American
Dock
"Mod"
Building

Hopedale, Labrador

Existing Land Use

100 0 100 200
meters

Prepared for
The Community of
Hopedale, Labrador,
and the Department of
Municipal Affairs and
Housing.

Prepared by
DPA Consulting Limited
in association with
Project Management and
Design (1974) Limited

A. History and Current Status

1. Hopedale was established by the Moravian Mission in 1782. As the community grew, more mission buildings were added in the central part of the town. Hopedale initially served as a trading post and service centre for the Inuit.

In 1952 an early warning radar station was established in Hopedale. The radar station is now closed and the buildings are used by PetroCan for oil exploration. The fishery is the main economic base of the community and will continue to be for some time.

2. Demographics

1981 Population: 425

Historic Population

Year	Population	Increase	Growth %	Average Annual Growth %
1971*	375			
1976	447	72	19.2	3.8
1981	425	-22	-5.0	-1.0

Footnotes:

* Hopedale was first identified as a separate community by Statistics Canada in 1971.

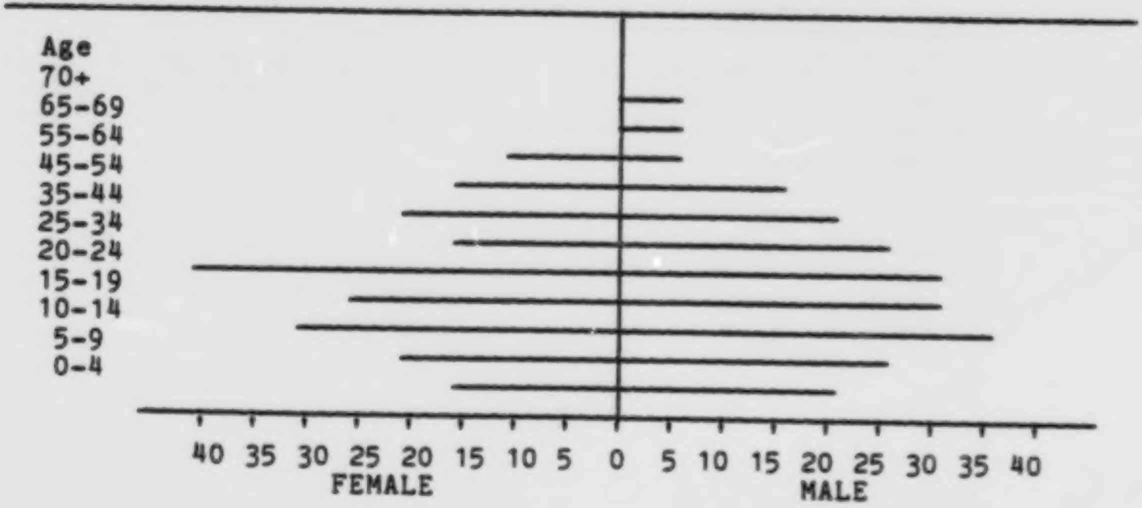
Source Note:

Community of Hopedale, Labrador, Municipal Plan, revised 1983.

Projected Future Population Growth:

1991 - 475 2005 - 522

Population Structure by Age and By Gender - 1981



No. of Females - 195 No. of Males - 230

Footnotes:

Sixty-eight percent of the population is under the age of 25; thus there is potential for future population growth in the community.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells X Other No

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination X
Fluoridation ____ None ____

2. **Sewage**

Collection System:

Pipe ____ Truck ____ Individual Systems ____ None __X__

Serving:

Government Buildings ____ Commercial Buildings ____ Residences ____

Disposal:

Lagoon ____ Septic Tanks ____ Treatment Plant ____ None __X__

---

3. **Solid Waste Disposal**

Garbage Collection Organized: Yes __X__ No ____
Landfill Site Utilized: Yes __X__ No ____
Other: Yes ____ No ____

---

4. **Police Protection**

R.C.M.P.: Yes __X__ No ____

Patrolled from: __Hopedale__

---

5. **Fire Protection Organized**

Organized: Yes __X__ No ____

Equipment: __sea water gasoline-driven pump__

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No ____

Size of Facility: 266.8 M^2

Staff: Doctors: ____ Nurses: 2

Other: 2 nursing assistants

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 11

Size: ____ Classrooms: 10 Teachers: 10

---

3. Residential

(1) Number of occupied private dwellings: 85
(2) Number of houses with sewer and water: no sewer system
(3) Housing Condition: 45, very good; 25 need minor repairs; 20 need major repairs
(4) Number of owned homes: 65
(5) Number of rented homes: 20
(6) Number of single detached homes: 80
(7) Number of single attached homes: ____
(8) Average number of persons per private household: 5.1
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 30
(11) Dwellings heated with stove or space heater: 55
(12) Dwellings heated by electric heat: 0
(13) Other: ____ 0

4. Community/Institutional/Commercial/Industrial Buildings

Church	Mission House
First Mission Building	Labrador Services Store
Restaurant	Sports Shop
Craft Centre	Confectionary Store
Confectionary Store	Community Hall
Gymnasium	

D. ECONOMIC ACTIVITIES

1. Fishery

E. COMMUNICATION LINKS

					Comments
Post Office	Yes	X	No		local
Television	Yes	X	No		pirated taped CBC
Radio	Yes	X	No		CBC from Happy Valley
Telephone	Yes	X	No		operator handled
High Frequency Radio	Yes		No	X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	scheduled & charter
Marine	CN Coastal Boats	scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. **Owner:** Newfoundland and Labrador Hydro/Power Distribution District

2. **Diesel Type:**
1 - 182 kw Cat. with B.B.C. generator
1 - 200 kw Cat. with Cat. generator
1 - 136 kw Cat. with Tamper generator

3. Diesel Fuel Consumption

	1981	1982
Annual Fuel Usage (litres)	341,563	349,075
Annual Fuel Cost	$144,586.00	$136,852.00
Cost per Litre	$0.42	$0.39
Cost Increase		-8%

4. Electricity Demand - Historical and Predicted (mwh)

1980	953	1985	1617
1981	867	1986	1697
1982	1225	1987	1781
1983	1468	1988	1868
1984	1541		

5. Peak Load Demand - Historical and Predicted (kw)

1980	210	1985	365
1981	210	1986	383
1982	252	1987	402
1983	331	1988	422
1984	347		

H. ASSESSMENT OF RESOURCES - Hopedale

Small Scale Hydro Potential

Available information indicates that there is no potential for hydro developments in this area.

Wood Resources

The published data base on the inventory of fuelwood resources in this area is insufficient to formulate definitive conclusions about this alternative. The Statistics Canada data base indicates that only approximately 20% of householders use wood as a primary fuel. Given the trend in other coastal Labrador communities to use wood where it is available, this statistic would suggest the supply is limited. Nevertheless, the potential to increase the use of wood as a primary or secondary fuel requires further study.

Peat Resources

No published fuel peat inventories are available for this area, and consequently no definitive conclusions can be made about this alternative.

Wind Resources

The Atmospheric Environment Service maintains mean annual wind speed records for Hopedale. The nominal yearly energy production is 484 kwh. per square meter of swept area. This information of itself is insufficient to make definitive comments on the economic viability of this alternative.

Cogeneration - District Heating - Heat Recovery

Information obtained from Newfoundland and Labrador Hydro indicates that there is potential for heat recovery in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

There is no potential for small scale hydro development in Hopedale.

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

There is one possibility for heat recovery in the Hopedale area, and it focuses on the use of waste heat from the diesel plant as freeze protection for the municipal water supply. BFL Consultants presently has an application pending approval by the CREDA Management Committee for this project.

1982 ENERGY PROFILE

LOAD CENTER: Hopedale COMMUNITY: Hopedale

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOO (tonnes
Residential	471 115		354 595		39
Commercial					
Industrial	15 480				
Government	454 265				
Street Lighting	9 504				
TOTAL	950 364		354 595		39

1982 ENERGY PROFILE

LOAD CENTER: Hopedale COMMUNITY: Hopedale

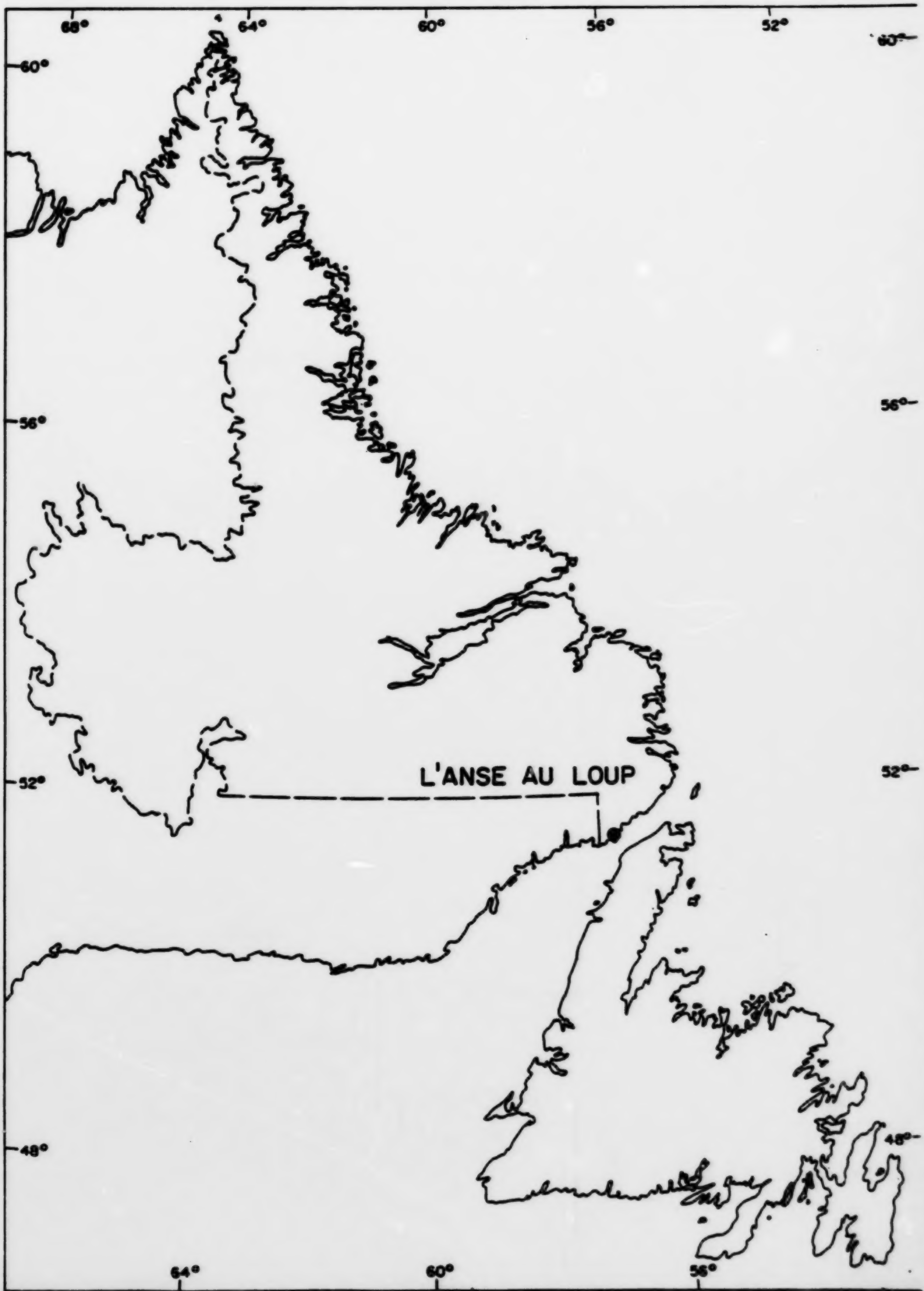
	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 696		13 361		3 162	18 219
Commercial						
Industrial	56					56
Government	1 635					1 635
Street Lighting	34					34
TOTAL	3 421		13 361		3 162	19 944

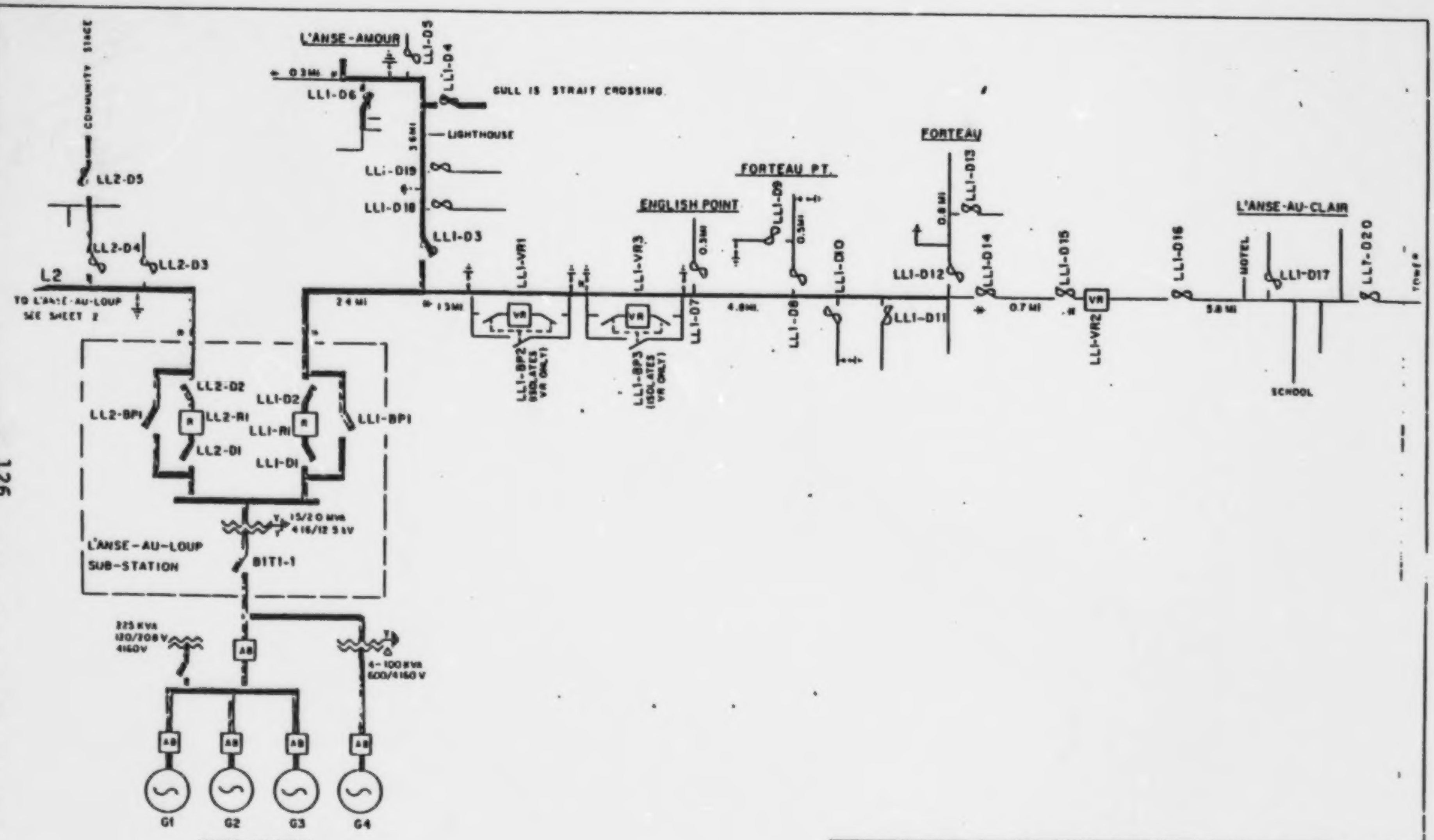
4.6 REMOTE COMMUNITY ANALYSIS

Load Center: L'Anse au Loup

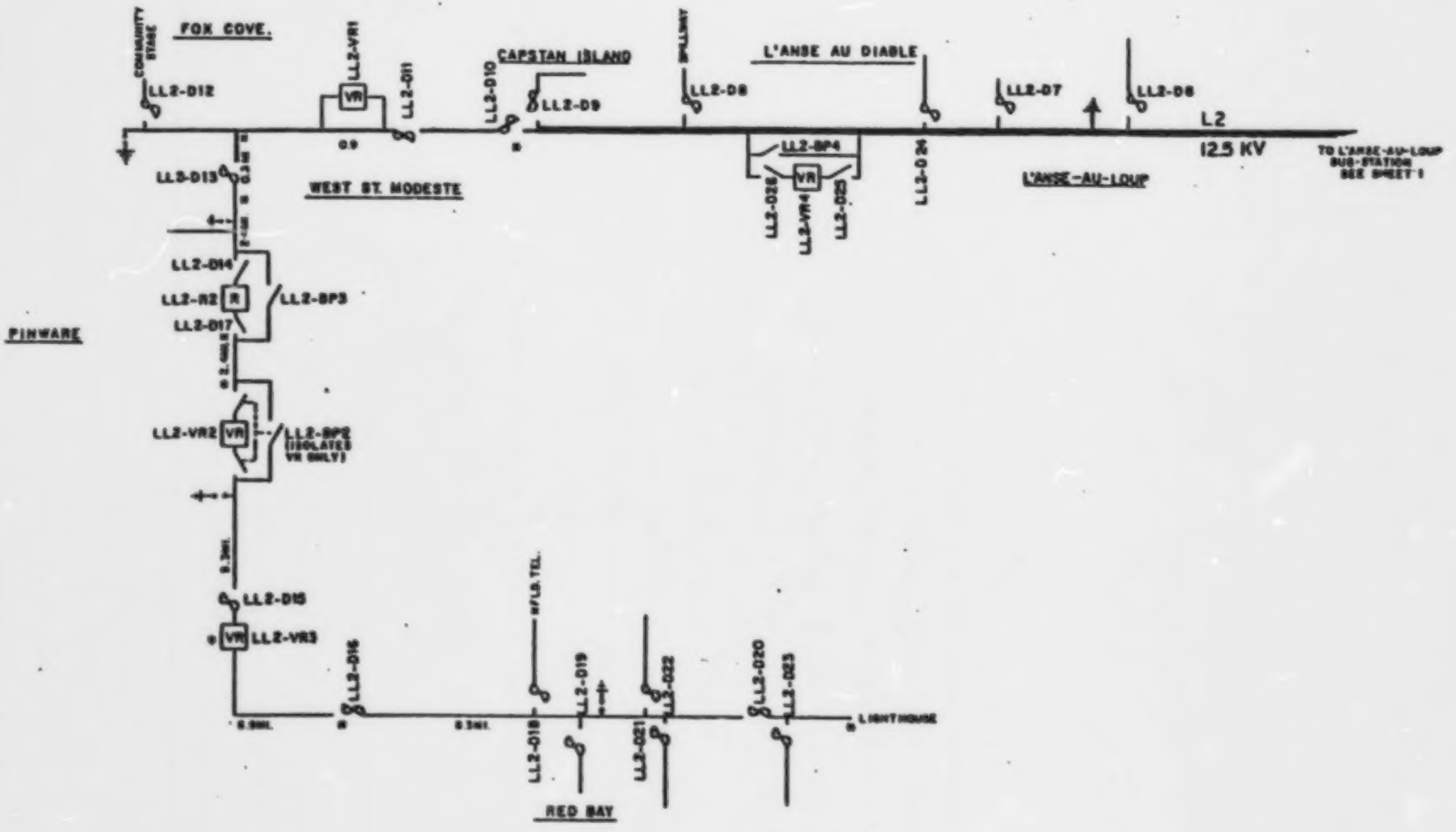
Communities Serviced: Capstan Island, English Point, Forteau, Fox Cove, L'Anse Amour, L'Anse au Clair, L'Anse au Diable, L'Anse au Loup, Pinware, Red Bay, West Ste. Modeste

Comments: The L'Anse au Loup diesel generating plant services a total of eleven communities as indicated above. For six of these communities, town planning information is available, and consequently the profiles are reasonably detailed. For the other five communities, the amount of information available is sparse. The information available for each community will be presented separately, beginning with those communities for which detailed data is available.


68°
64°
60°
56°
52°
60°
60°
56°
52°
48°
56°
52°
48°
L'ANSE AU LOUP
64°
60°
56°


COMMUNITY STAGE
LL2-D5
LL2-D4
LL2-D3
L2
TO L'ANSE-AU-LOUP SEE SHEET 2
L'ANSE-AMOUR
LL1-D5
LL1-D4
0.3MI
LL1-D6
GULL IS STRAIT CROSSING.
3.6MI
LIGHTHOUSE
LL1-D19
LL1-D18
LL1-D3
2.4 MI
1.3MI
LL1-VR1
VR
LL1-BP2 (ISOLATES VR ONLY)
LL1-VR3
VR
LL1-BP3 (ISOLATES VR ONLY)
ENGLISH POINT
0.3MI
LL1-07
4.8MI.
FORTEAU PT.
LL1-D9
0.5MI
LL1-D8
LL1-D10
FORTEAU
0.8 MI
LL1-D13
LL1-D12
LL1-D11
LL1-D14
0.7 MI
LL1-015
VR
LL1-VR2
LL1-D16
5.8 MI
L'ANSE-AU-CLAIR
MOTEL
LL1-D17
SCHOOL
LL7-D20
TOWER
LL2-D2
LL2-BP1
R
LL2-R1
LL2-D1
LL1-D2
LL1-R1
R
LL1-D1
LL1-BP1
15/20 MVA 4.16/12.5 kV
L'ANSE-AU-LOUP SUB-STATION
B1T1-1
225 KVA 120/208V 4160V
AB
4-100 KVA 600/4160 V
AB
AB
AB
AB
G1
G2
G3
G4
L'ANSE-AU-LOUP DIESEL PLANT

APPROVED BY W.F.R.	NEWFOUNDLAND AND LABRADOR HYDRO	[illegible]
DATE 82-07-14	L'ANSE-AU-LOUP DISTRIBUTION SYSTEM	
REVISION No. 7		308-1


FOX COVE.
COMMUNITY STAGE
LL2-D12
LL2-VR1
VR
0.9
LL2-D11
LL2-D10
CAPSTAN ISLAND
LL2-D9
SPILLWAY
LL2-D8
L'ANSE AU DIABLE
LL2-BP4
VR
LL2-D26
LL2-VR4
LL2-D25
LL2-D24
LL2-D7
LL2-D6
L2
12.5 KV
TO L'ANSE-AU-LOUP SUB-STATION SEE SHEET 1
L'ANSE-AU-LOUP
WEST ST. MODESTE
LL2-D13
LL2-D14
LL2-R2
R
LL2-BP3
LL2-D17
PINWARE
LL2-VR2
VR
LL2-BP2 (ISOLATES VR ONLY)
LL2-D15
LL2-VR3
VR
LL2-D16
NFLD. TEL.
LL2-D18
LL2-D19
LL2-D21
LL2-D22
LL2-D20
LL2-D23
LIGHTHOUSE
RED BAY

APPROVED BY: W. F. R.	NEWFOUNDLAND AND LABRADOR HYDRO	SH 2 of 2
DATE: 82-11-17	L'ANSE-AU-LOUPE DISTRIBUTION SYSTEM	DWG No. 308-2
REVISION No.: 6		

4.6.1 REMOTE COMMUNITY ANALYSIS

Community Profile:	Capstan Island, Labrador
Status:	Unincorporated
Location:	Lat: 51° 38' N Long: 56° 42' W

Sources of Information:

Publications and Articles

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1981.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 19

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

A. History and Current Status

1. Capstan Island is not an island, but was named after one. Around 1851, the residents of the area put a capstan on the island and attached a seal net to it. When the seals migrated along the shore in June, they were trapped by the net.

Capstan Island has good soil and an abundance of fresh water. The main economic activity of the community is fishing.

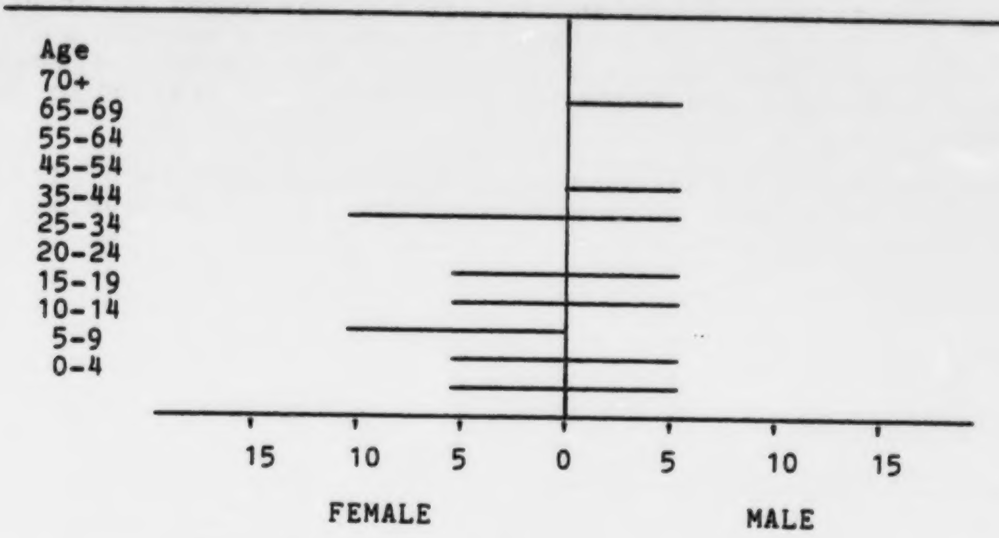
2. Demographics

1981 Population: 77

Projected Future Population Growth:

1. At 2% per annum: 1986 - 85 1991 - 92

Population Structure by Age and By Gender - 1981*



No. of Females - 41   No. of Males - 36

Footnotes:

* There is a fairly young population. Sixty-seven percent is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. **Water**

Source:

Lake ____ River ____ Wells X Other ____

Distribution:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks X Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes X No ____
Other: Yes ____ No X

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Forteau

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. **Education**

School located in community: Yes ____ No X

Grades: ____________

Size: ____ Classrooms: ____ Teachers: ____

---

3. **Residential**

(1) Number of occupied private dwellings: 20
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 15
(5) Number of rented homes: 0
(6) Number of single detached homes: 15
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 4.5
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: ____________ N/A

---

4. **Community/Institutional/Commercial/Industrial Buildings**

Community Hall

D. ECONOMIC ACTIVITIES

1. Fishery
2. Agriculture

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	Uses West Ste. Modeste
Television	Yes X	No	CBC
Radio	Yes X	No	CBC, CFCB
Telephone	Yes X	No	D.D.D. Forteau exchange
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways Quebec Air	Scheduled & Charter
Marine	Ferry Service	from St. Barbe
Bus	Not Available	
Other	Gravel road connects all Straits communities	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars	X		
Heavy Vehicles	X		
Other	X		taxi service

4.6.2 REMOTE COMMUNITY ANALYSIS

Community Profile: Forteau, Labrador

Status: Incorporated

Location: Lat: 51° 28' N
Long: 56° 58' W

Sources of Information:

Publications and Articles

Arco Co. Ltd. and Terpstra Engineering Ltd., "Forteau Municipal Plan," January 1982.

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1981.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 198

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Woodward's Oil Limited, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

A. History and Current Status

1. Forteau was established by the French in the early 1700's. By the 1770's a Jersey merchant, De Quettville, started a fishing business there. In 1818 Forteau was the largest British settlement on the Labrador Straits. In 1849 the Anglican Bishop Field built the first church there, and in 1909 the International Grenfell Association built the first nursing station that has continued to give medical service in the Labrador Straits since then.

Forteau serves as the administrative centre for the Straits area. There is a resident Manpower office, Social Services officer and R.C.M.P. officers. The community was founded on the cod fishery and its future still hinges largely on the fishing industry. Forteau does not have a fish processing plant at present, probably because it lacks three-phase power.

2. Demographics

1981 Population: 520

Historic Population

Year	Population	Increase	Growth %	Average Annual Growth %
1951	192			
1956	223	31	16.1	3.2
1961	232	9	4.0	0.8
1966	248	16	6.9	1.4
1971	312	64	25.8	5.2
1976	457	45	14.4	2.9
1981	520	18	3.9	0.8

Footnotes:

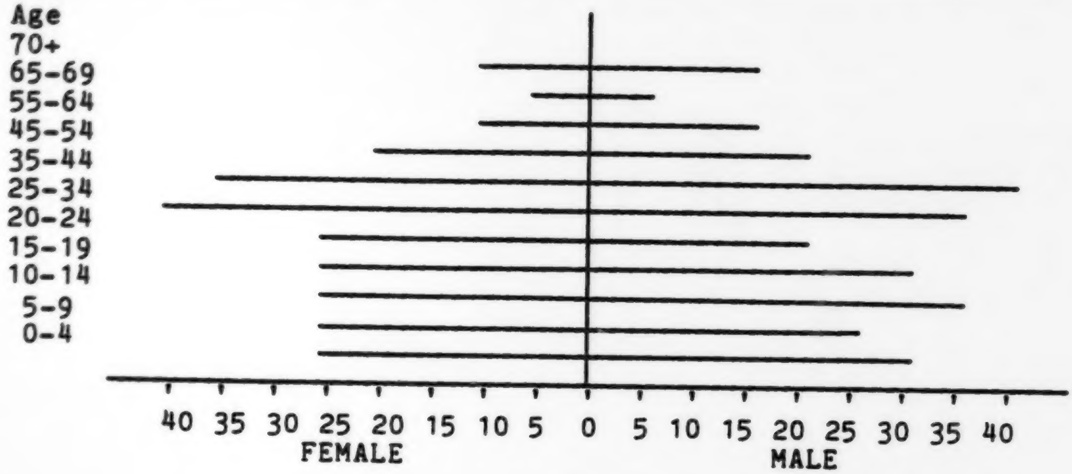
The population has steadily increased to a point where the rate of growth is slowing down.

Source note: Forteau Municipal Plan
1981 Census of Canada

Projected Future Population Growth:

1. At 2% per annum: 1986 - 572 1991 - 624
2. At 4-5% per annum: 1985 - 624 1990 - 754

Population Structure by Age and By Gender - 1981



No. of Females - 245 No. of Males - 275

Footnotes:

Over 65% of the total population is under 25. This shows great potential for sustained population growth.

Source Note: 1981 Census of Canada

B. COMMUNITY SERVICES

1. Water

Source:

Lake _____ River __X__ Wells __X__ Other ____No____

Distribution:

Pipe __X__ Truck _____ Individual Systems _____ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__ Standpipes ___

Treatment:

Sedimentation _____ Filtration _____ Chlorination __X__
Fluoridation _____ None _____

---

2. Sewage

Collection System:

Pipe __X__ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon __X__ Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes __X__ No _____
Landfill Site Utilized: Yes _____ No __X__
Other: __Incinerator__ Yes __X__ No _____

4. **Police Protection**

R.C.M.P.: Yes X No ____

Patrolled from: Forteau

---

5. **Fire Protection Organized**

Organized: Yes X No ____

Equipment: Hydrants

C. COMMUNITY FACILITIES

1. **Health**

Clinic in Community: Yes X No ____

Size of Facility: 1039.6 M^2

Staff: Doctors: ____ Nurses: 2

Other: resident dentist, visiting doctors

---

2. **Education**

School located in community: Yes 2 No ____

Grades: Kindergarten to Grade 6, Grades 7 to 11

Size: N/A Classrooms: N/A Teachers: 7, 9

---

3. Residential

(1) Number of occupied private dwellings: 130
(2) Number of houses with sewer and water: 60% have water; no public sewer system
(3) Housing Condition: 120 need regular maintenance; 10 need minor repairs; 5 need major repairs
(4) Number of owned homes: 115
(5) Number of rented homes: 10
(6) Number of single detached homes: 120
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 4.1
(9) Dwellings heated by steam or hot water: 5
(10) Dwellings heated by hot air: 70
(11) Dwellings heated with stove or space heater: 35
(12) Dwellings heated by electric heat: 0
(13) Other: wood 20

---

4. Community/Institutional/Commercial/Industrial Buildings

United Church
Pentecostal Church
General Store
General Store
Gas Station
Garage
Community Hall
Gymnasium

Anglican Church
Plymouth Brethern Church
General Store
Restaurant/Lounge
Gas Station
Woodshop
Salmon Lodge
Nursing Station

D. ECONOMIC ACTIVITIES

1. Fishery
2. Tourism

E. COMMUNICATION LINKS

					Comments
Post Office	Yes	X	No		A0K 2P0
Television	Yes	X	No		CBC
Radio	Yes	X	No		CBC, CFCB
Telephone	Yes	X	No	X	Nfld. Telephone D.D.D.
High Frequency Radio	Yes		No	X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways Quebec Air	Scheduled & Charter
Marine	Ferry Service	from St. Barbe to Blanc Sablon
Bus	Not Available	
Other	Gravel road connects all Straits communities	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars	X		
Heavy Vehicles	X		
Other	X		Taxi Service

1982 ENERGY PROFILE

LOAD CENTER: L'Anse au Loup COMMUNITY: Forteau

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOO (tonnes
Residential	1 016 444		409 148		1 43
Commercial	97 543				
Industrial					
Government	105 671				
Street Lighting	6 237				
TOTAL	1 225 895		409 148		1 43

1982 ENERGY PROFILE

LOAD CENTER: L'Anse au Loup COMMUNITY: Forteau

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	3 659		15 417		11 606	30 682
Commercial	351					351
Industrial						
Government	380					380
Street Lighting	22					22
TOTAL	4 413		15 417		11 606	31 435

4.6.3 REMOTE COMMUNITY ANALYSIS

Community Profile: L'Anse au Clair, Labrador

Status: Incorporated

Location: Lat: 51° 25' N

Long: 57° 05' W

Sources of Information:

Publications and Articles

Arco Co. Ltd. and Terpstra Engineering Ltd., "L'Anse au Clair Municipal Plan," May 1980.

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1981.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 19

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

A. History and Current Status

1. L'Anse au Clair was established by the French in the early 18th century. Englishmen and Newfoundlanders settled there during the first half of the 19th century, shortly after the border dispute in 1825.

L'Anse au Clair is considered the gateway to the Labrador Straits and is the only Straits community with a hotel facility. This probably developed to take advantage of the close proximity to the ferry and air services at Blanc Sablon, Quebec. L'Anse au Clair is therefore serving a regional function and has a head start on the tourism industry.

2. Demographics

1981 Population: 267

Historic Population

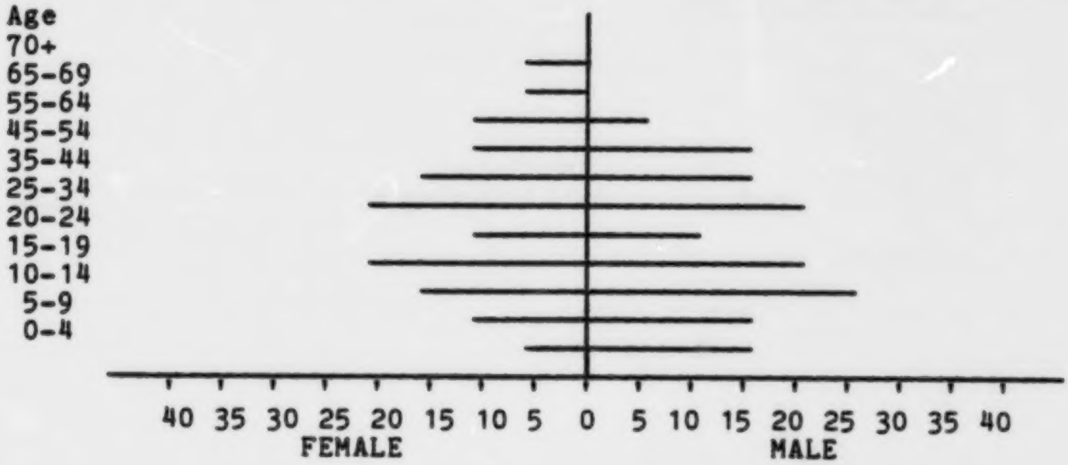
Year	Population	Increase	Growth %	Average Annual Growth %
1951	152			
1956	180	28	18.4	3.7
1961	202	22	12.8	2.6
1966	244	42	20.8	4.2
1971	232	-12	-4.9	-1.0
1976	248	14	5.6	1.1
1981	267	19	7.7	1.5

Source note: L'Anse au Clair Municipal Plan
1981 Census of Canada

Projected Future Population Growth:

At 2% per annum: 1986 - 294 1991 - 320

Population Structure by Age and By Gender - 1981



No. of Females - 122 No. of Males - 145

Footnotes:

Fifty-five percent of the population is under the age of 25; therefore there is potential for sustained population growth in this community.

Source Note: 1981 Census of Canada

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River X Wells ____ Other No

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination X
Fluoridation ____ None ____

2. Sewage

Collection System:

Pipe X   Truck ____   Individual Systems ____   None ____

Serving:

Government Buildings X   Commercial Buildings X   Residences X

Disposal:

Lagoon X   Septic Tanks ____   Treatment Plant ____   None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes ____ No X
Other: Incinerator in Forteau Yes X No ____

---

4. Police Protection

R.C.M.P.: Yes X   No ____

Patrolled from: Forteau

---

5. Fire Protection Organized

Organized: Yes X   No ____

Equipment: Hydrants

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: Medical facilities in Forteau

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 6

Size: N/A Classrooms: 3 Teachers: 3

---

3. Residential

(1) Number of occupied private dwellings: 65
(2) Number of houses with sewer and water: 100% have water; most have septic tanks
(3) Housing Condition: 55, very good; 5 need minor repairs; 5 need major repairs
(4) Number of owned homes: 60
(5) Number of rented homes: 5
(6) Number of single detached homes: 55
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 4.1
(9) Dwellings heated by steam or hot water: 10
(10) Dwellings heated by hot air: 40
(11) Dwellings heated with stove or space heater: 5
(12) Dwellings heated by electric heat: 0
(13) Other: ____ 0

4. Community/Institutional/Commercial/Industrial Buildings

Church
General Store
Groceteria
Restaurant
Garage
Gas Station
Hotel

General Store
General Store
Building Supply Store
Office Building (AVCO)
Garage
Gas Station
Cabins (7 housekeeping units)

D. ECONOMIC ACTIVITIES

1. Fishery
2. Agriculture
3. Tourism

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	CBC, CFCB
Telephone	Yes X	No	Nfld. Telephone D.D.D.
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways Quebec Air	Scheduled & Charter
Marine	Ferry Service	from St. Barbe to Blanc Sablon
Bus	Not Available	
Other	Gravel road connects all Straits communities	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars	X		
Heavy Vehicles	X		
Other	X		Taxi Service

1982 ENERGY PROFILE

LOAD CENTER: L'Anse au Loup COMMUNITY: L'Anse au Clair

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOO (tonnes
Residential	558 749		190 936		65
Commercial	142 341				
Industrial					
Government	142 341				
Street Lighting	4 158				
TOTAL	847 589		190 936		65

1982 ENERGY PROFILE

LOAD CENTER: L'Anse au Loup COMMUNITY: L'Anse au Clair

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	2 011		7 194		5 273	14 478
Commercial	512					512
Industrial						
Government	512					512
Street Lighting	15					15
TOTAL	3 051		7 194		5 273	15 517

4.6.4 REMOTE COMMUNITY ANALYSIS

Community Profile: L'Anse au Loup, Labrador

Status: Incorporated

Location: 51° 27' N
56° 53' W

Sources of Information:

Publications and Articles

Arco Co. Ltd. and Terpstra Engineering Ltd., "L'Anse au Loup Municipal Plan," May 1980.

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1981.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 198

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

A. History and Current Status

1. L'Anse au Loup, first established by the French in the early 1700's, was also settled by English, Scots and Irish. As early as 1778 there was a thriving fishing and sealing industry established by Noble and Pinson from England.

   L'Anse au Loup is the regional centre for electric power generation, fuel supply, fish processing and some government services.

2. Demographics

1981 Population: 589

Historic Population

Year	Population	Increase	Growth %	Average Annual Growth %
1945	217			
1951	268	51	23.5	3.9
1956	291	23	8.6	1.7
1961	343	52	17.9	3.6
1966	400	57	16.6	3.3
1971	448	48	12.0	2.4
1976	531	83	18.5	3.7
1981	589	58	11.0	2.2

Footnotes:

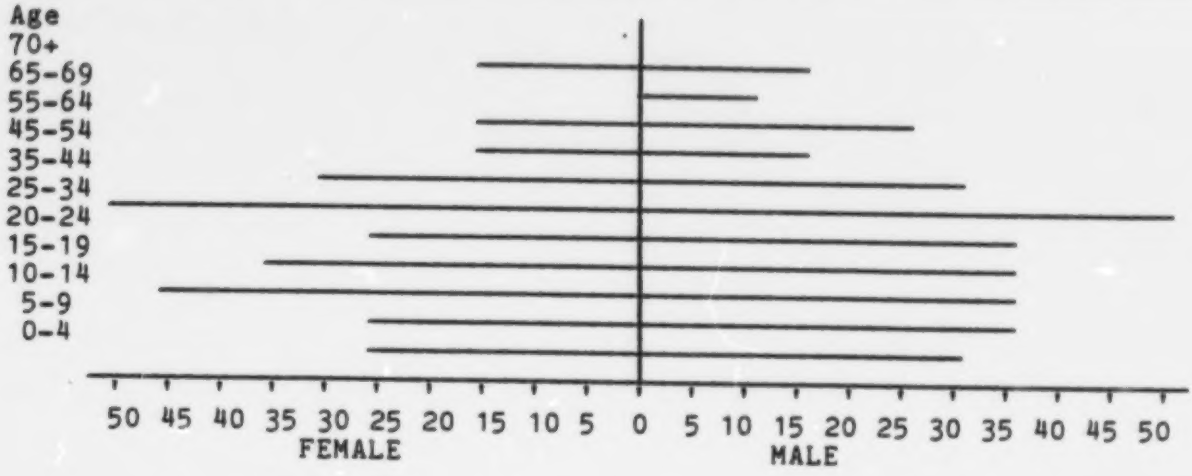
There has been a steady population increase.

Source Note: L'Anse au Loup Municipal Plan, May 1980.

Projected Future Population Growth:

1986 - 648 1991 - 707

Population Structure by Age and By Gender - 1981



No. of Females - 280 No. of Males - 309

Footnotes:

Over 60% of the community's population is under 25. This shows great potential for sustained population growth in the community.

Source Note: 1981 Census of Canada

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River X Wells X Other No

Distribution:

Pipe X Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination X
Fluoridation ____ None ____

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon ____ Septic Tanks X Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes X No ____
Other: Yes ____ No X

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Forteau

---

5. Fire Protection Organized

Organized: Yes X No ____

Equipment: Hydrants

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: Medical services at Forteau.
Visiting doctor from St. Anthony.

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 6

Size: N/A Classrooms: 4 Teachers: 4

3. Residential

(1) Number of occupied private dwellings: 130
(2) Number of houses with sewer and water: 100%
(3) Housing Condition: very good, 50%; good, 28%; fair, 15%; poor, 7%
(4) Number of owned homes: 125
(5) Number of rented homes: 5
(6) Number of single detached homes: 120
(7) Number of single attached homes: ____
(8) Average number of persons per private household: 4.5
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 75
(11) Dwellings heated with stove or space heater: 55
(12) Dwellings heated by electric heat: 0
(13) Other: ____ 0

4. Community/Institutional/Commercial/Industrial Buildings

General Store
General Store
General Store
General Store
General Store
General Store
Nfld. Liquor Corp.
Craft Centre
Museum
Fish Plant
Church

Restaurant
Lounge
Garage
Garage
Bank
Library
Construction Company
Furniture & Appliance Store
Community Hall
Indoor Swimming Pool

D. ECONOMIC ACTIVITIES

1. Fishery
2. Heavy Equipment Contracting
3. Service Industries

E. COMMUNICATION LINKS

					Comments
Post Office	Yes	X	No		A0K 3L0
Television	Yes	X	No		CBC
Radio	Yes	X	No		CBC & CFCB
Telephone	Yes	X	No		Nfld. Telephone D.D.D
High Frequency Radio	Yes		No	X	

Operated By: ______

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	scheduled & charter
Marine	Ferry Service	From St. Barbe to Blanc Sablon
Bus	Not Available	
Other	Labrador Straits communities connected by gravel road	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars	X		
Heavy Vehicles	X		
Other	X		Taxi Service

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
1 - 600 kw Cat. with CANRON Generator
1 - 800 kw Cat. with CANRON Generator
1 - 850 kw Cat. with Kato Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	1,921,563	2,052,982
Annual Fuel Cost	$526,830.00	$653,726.00
Cost per litre	$0.27	$0.39
Cost Increase		44%

4. Electricity Demand - Historical and Predicted (mwh):

1980	5633	1985	7175
1981	5891	1986	7435
1982	6456	1987	7704
1983	6685	1988	7984
1984	6926		

5. Peak Load Demand - Historical and Predicted (kw):

1980	1368	1985	1773
1981	1440	1986	1842
1982	1584	1987	1912
1983	1645	1988	1986
1984	1708		

H. ASSESSMENT OF RESOURCES - L'Anse au Loup - Total Load Centre

Small Scale Hydro Potential

L'Anse au Loup is the load center and location of a diesel generating plant which serves eleven communities along a 65 km. stretch of the south coast of Labrador along the Strait of Belle Isle. Although it would be preferable from an operational point of view to have any potential hydro development located close to the diesel plant, potential sites anywhere on the system could be considered as potential developments. In this light, then, there are six possible sites located within 8 km. of the nearest transmission line.

The closest site to the diesel plant is located on an unnamed river, which has been named L'Anse au Loup River for the purpose of identification and is 1.6 km. from the nearest point on the transmission line. The site has an estimated nominal capacity of 540 kw. through a head of approximately 14 M.

The next site is located on Forteau Brook, 8 km. from the transmission line. The nominal capacity is 425 kw. through a head of approximately 8 M.

The next closest site to the diesel plant is located on an unnamed river (fictitiously named the Little Pinware River), 0.7 km. from the transmission line. This site has a nominal capacity of 415 kw. through a head of approximately 15 M.

Next is a site at L'Anse au Clair, located 0.7 km. from the transmission line. This site has a nominal capacity of 390 kw. through a head of approximately 42 M.

Another site on Red Bay Brook is located very near the transmission line. This site has a nominal capacity of 250 kw. through a head of approximately 20 M.

Wood Resources

The published data base on the inventory of fuelwood resources in this area is inadequate to allow for the formulation of definitive conclusions about this alternative. The Statistics Canada data base for this area indicates that the number of households using wood as a primary fuel ranges from a low of 19% in L'Anse au Loup to a high of 51% in Pinware and Red Bay. The other communities in the area for which this information is available indicates this consumption to be as follows: Forteau, 43%; L'Anse au Clair, 42%; West St. Modeste and Capstan Island, 34%. The variation between communities of the proportion of households using wood as a primary fuel cannot be explained from the existing data base, and the only way to estimate the potential to increase the use of this source as a primary and secondary fuel is through further research.

Peat Resources

No published fuel peat inventories are available for this area, and consequently no definitive conclusions can be made about this alternative.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

There are two promising sites for small scale hydroelectric development in the L'Anse au Loup area. The site on L'Anse au Loup River, near the community of L'Anse au Loup, was identified in the 1979 inventory study conducted by Shawmont Newfoundland Limited. This site would develop 420 kw. of electric power and would have a capital cost of between $1.7 and $2.3 million. The Annual Equivalent Cost of energy for this site is estimated to be approximately $0.19 per kwh.

The second site was identified in a study for the installation of water and sewer services for the community of Red Bay. This study was conducted by Bishop and Forbes (1978) Ltd. This site on Northern Brook, which would be developed in conjunction with the water and sewer system, would develop 335 kw. of electric power and would have a capital cost of approximately $2,150,000. This would yield an Annual Equivalent Cost of energy of approximately $0.16 per kwh. based on the 60% load factor used in the study.

Either of these two sites appears to be economically viable. The site on L'Anse au Loup River has the advantage of being close to the load center and the existing diesel generating plant. The major disadvantage of this site is the large Atlantic Salmon population which inhabits the river at certain times of the year.

The capital cost of the Red Bay site includes approximately $1,000,000 for the upgrading of the transmission line from L'Anse au Loup to Red Bay. This upgrading is required to permit the backfeeding of power from Red Bay. Exclusive of this line upgrading cost, Red Bay is clearly the more economically attractive site, with an Annual Equivalent Cost of energy of approximately $0.09 per kwh.

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: L'Anse au Loup COMMUNITY: L'Anse au Loup

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOO (tonnes
Residential	948 702		600 084		65
Commercial	102 187				
Industrial	232 800				
Government	166 726				
Street Lighting	129 789				
TOTAL	1 580 204		600 084		65

1982 ENERGY PROFILE

LOAD CENTER: L'Anse au Loup COMMUNITY: L'Anse au Loup

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	3 415		22 611		5 273	31 299
Commercial	368					368
Industrial	838					838
Government	600					600
Street Lighting	467					467
TOTAL	5 689		22 611		5 273	33 572

4.6.5 REMOTE COMMUNITY ANALYSIS

Community Profile: Pinware, Labrador

Status: Incorporated

Location: Lat: 51° 38' N

Long: 56° 42' W

Sources of Information:

Publications and Articles

Pinware Municipal Plan, 1980.

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1981.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 198

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

A. History and Current Status

1. Pinware was first occupied in the 1500's by Basque whalers. After the Basques, French fishermen occupied the area. The community has also been settled by English, Scottish and Irish pioneers. The sandy beaches of Pinware and French Cove form part of the provincial park of the Labrador Straits. The principal economic activities are fishing, hunting and trapping.

2. Demographics

1981 Population: 201

Historic Population

Year	Population	Increase	Growth %	Average Annual Growth %
1951				
1956	106	32	43.2	8.6
1961	121	15	14.2	2.8
1966	156	35	28.9	5.8
1971	N.A.*	N.A.*	N.A.*	N.A.*
1976	166	10	6.0	0.6
1981	201	35	21.0	4.2

Footnotes:

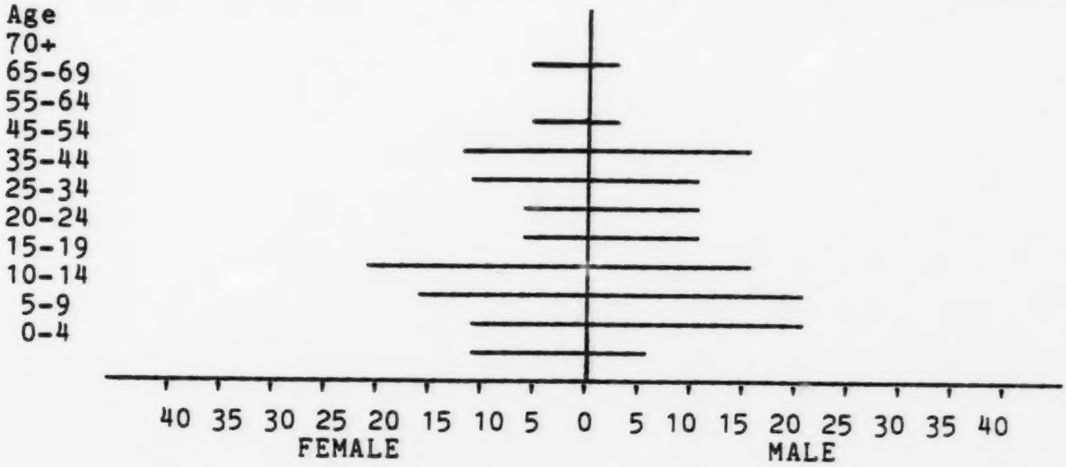
* Not Available

Source note: Pinware Municipal Plan, 1980

Projected Future Population Growth:

1. At 2% per annum: 1986 - 221 1991 - 241
2. At 4-5% per annum: 1985 - 241 1990 - 291

Population Structure by Age and By Gender - 1981



No. of Females - 95 No. of Males - 106

Footnotes:

Over 65% of the population is under 25. This shows potential for sustained population growth in the community.

Source Note: 1981 Census of Canada

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River _X_ Wells _X_ Other _No_

Distribution:

Pipe ____ Truck ____ Individual Systems ____ None _X_

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_ Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None _X_

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_

Disposal:

Lagoon ____ Septic Tanks _X_ Treatment Plant ____ None _X_

---

3. Solid Waste Disposal

Garbage Collection Organized:	Yes	X	No	
Landfill Site Utilized:	Yes	X	Nc	
Other:	Yes		No	X

---

4. Police Protection

R.C.M.P.: Yes __X__ No _____

Patrolled from: __Forteau__

---

5. Fire Protection Organized

Organized: Yes _____ No __X__

Equipment: ____________________

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes _____ No __X__

Size of Facility: ____________________

Staff: Doctors: _____ Nurses: ____________________

Other: ____________________

---

2. Education

School located in community: Yes _____ No __X__

Grades: ____________________

Size: _____ Classrooms: _____ Teachers: _____

---

3. Residential

(1) Number of occupied private dwellings: 35
(2) Number of houses with sewer and water: 95% have toilets; 100% have access to water
(3) Housing Condition: very good, 28%; good, 33%; fair, 28%; poor, 11%
(4) Number of owned homes: 35
(5) Number of rented homes: 0
(6) Number of single detached homes: 35
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 5.5
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 10
(11) Dwellings heated with stove or space heater: 20
(12) Dwellings heated by electric heat: 0
(13) Other: wood 5

---

4. Community/Institutional/Commercial/Industrial Buildings

General Store
General Store
General Store
Garage
Gas Station
Restaurant/Lounge
Community Hall
Craft Store
Beer Outlet

D. ECONOMIC ACTIVITIES

1. Fishing
2. Crafts

E. COMMUNICATION LINKS

					Comments
Post Office	Yes		No	X	from West Ste. Modest
Television	Yes	X	No		CBC
Radio	Yes	X	No		CBC & CFCB
Telephone	Yes	X	No		Nfld. Telephone D.D.D
High Frequency Radio	Yes		No	X	

Operated By: ____________________

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways Quebec Air	Scheduled & Charter
Marine	Ferry Service	from St.Barbe to Blanc Sablon
Bus	Not Available	
Other	Labrador Straits communities are connected by gravel road	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars	X		
Heavy Vehicles	X		
Other	X		Taxi Service

1982 ENERGY PROFILE

LOAD CENTER: L'Anse au Loup COMMUNITY: Pinware

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOO (tonnes
Residential	225 297		81 830		39
Commercial	54 557				
Industrial					
Government	2 273				
Street Lighting	6 336				
TOTAL	288 463		81 830		39

1982 ENERGY PROFILE

LOAD CENTER: L'Anse au Loup COMMUNITY: Pinware

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	811		3 083		3 162	7 056
Commercial	196					196
Industrial						
Government	8					8
Street Lighting	23					23
TOTAL	1 038		3 083		3 162	7 283

4.6.5 REMOTE COMMUNITY ANALYSIS

Community Profile: Red Bay, Labrador

Status: Incorporated

Location: Lat: 51° 38' N

Long: 56° 42' W

Sources of Information:

Publications and Articles

Arco Co. Ltd. and Terpstra Engineering Ltd., "Red Bay Municipal Plan," May 1980.

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1981.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 198

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

A. History and Current Status

1. Red Bay was the seasonal home of Basque whalers during the 1500's. After the defeat of the Spanish Armada, the Basque abandoned their whaling stations. During the 19th century, stationers from Conception Bay made Red Bay their summer fishing station. There was a winter settlement at the head of the bay where there was a good supply of wood, and a summer station at the mouth of the harbour which is closer to the fishing grounds. During the 1930's, the winter community was abandoned in favour of the summer community. The present trend is to move back to the winter community. The present residents are mainly descendents from the Conception Bay stationers. The main economic activity of the community is still the fishery.

Red Bay has been declared an historical site. It is thought that Saddle Island, part of the Harbour Area, the Tracy Shore and some inland sites may be of historical value in connection with Basque and Indian occupation.

2. Demographics

1981 Population: 316

Historic Population

Year	Population	Increase	Growth %	Average Annual Growth %
1951	183			
1956	207	24	13.1	2.6
1961	261	54	26.1	5.2
1966	293	32	12.3	2.5
1971	296	3	1.0	0.2
1976	296	0	0.0	0.0
1981	316	20	6.8	1.4

Footnotes:

Although the population has steadily increased, the growth rate is decreasing.

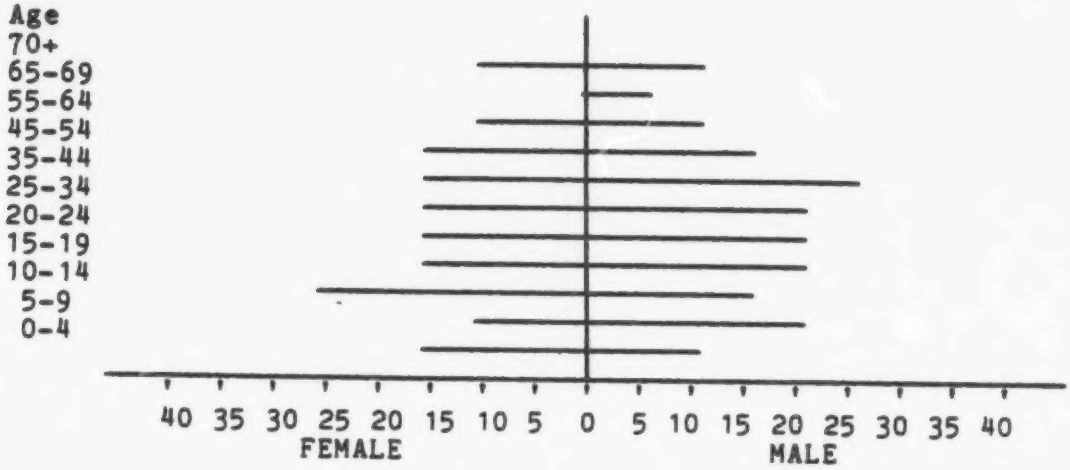
Source note: Red Bay Municipal Plan, 1980
1981 Census of Canada

Projected Future Population Growth:

1. At 2% per annum: 1986 - 348 1991 - 379

2. At 4-5% per annum: 1985 - 379 1990 - 458

Population Structure by Age and By Gender - 1981



No. of Females - 148 No. of Males - 168

Footnotes:

The population is spread fairly evenly across the various age groups, with 52% of the total population under the age of 20.

Source Note: 1981 Census of Canada

B. COMMUNITY SERVICES

1. Water

Source:

Lake _____ River __X__ Wells __X__ Other ____No____

Distribution:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__ Standpipes ___

Treatment:

Sedimentation _____ Filtration _____ Chlorination _____
Fluoridation _____ None __X__

---

2. Sewage

Collection System:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon ____ Septic Tanks _50%_ Treatment Plant ____ None _50%_

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes __X__ No _____
Landfill Site Utilized: Yes __X__ No _____
Other: Yes _____ No __X__

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Forteau

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: ____

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: a nurse visits from Forteau

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 10

Size: N/A Classrooms: N/A Teachers: 5

---

3. Residential

(1) Number of occupied private dwellings: 85
(2) Number of houses with sewer and water: 50% have septic tanks; 100% use wells
(3) Housing Condition: very good, 32%; good, 27%; fair, 30%; poor, 11%
(4) Number of owned homes: 70
(5) Number of rented homes: 15
(6) Number of single detached homes: 65
(7) Number of single attached homes: 20
(8) Average number of persons per private household: 4.4
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 30
(11) Dwellings heated with stove or space heater: 45
(12) Dwellings heated by electric heat: 0
(13) Other: 5

---

4. Community/Institutional/Commercial/Industrial Buildings

Church	Gospel Hall
Community Hall	Museum
Organ's Store	Red Bay Store
Gas Station	Fish Plant

D. ECONOMIC ACTIVITIES

1. Fishery
2. Crafts

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	a room in a private house
Television	Yes X	No	CBC
Radio	Yes X	No	CBC, CFCB
Telephone	Yes X	No	Nfld. Telephone D.D.D
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways Quebec Air	Scheduled & Charter
Marine	Ferry Service	from St.Barbe to Blanc Sablon
Bus	Not Available	
Other	Gravel road connects all Straits communities	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars	X		
Heavy Vehicles	X		
Other	X		Taxi Service

1982 ENERGY PROFILE

LOAD CENTER: L'Anse au Loup COMMUNITY: Red Bay

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWO (tonne
Residential	476 662		229 123		1 0
Commercial	120 305				
Industrial					
Government	120 305				
Street Lighting	6 534				
TOTAL	723 806		229 123		1 0

A. History and Current Status

1. West Ste. Modeste was given its name by Pierre Constantine after his ancestral home in St. Modet, Normandy, France. The community has a French heritage, evidenced by its name and the Old French Fort above the settlement. In 1903 Dr. Wilfred Grenfell opened the second Co-op store in Labrador, and in 1958 the Oblate Missionaries chose West Ste. Modeste as the site for their mission "Our Lady of Labrador."

West Ste. Modeste serves some regional functions, housing the Regional Bait Depot for the Labrador Straits. The community is also the headquarters for the Roman Catholic Church in the Straits area. The major economic activities are fishing, agriculture and tourism.

2. Demographics

1981 Population: 273

Historic Population

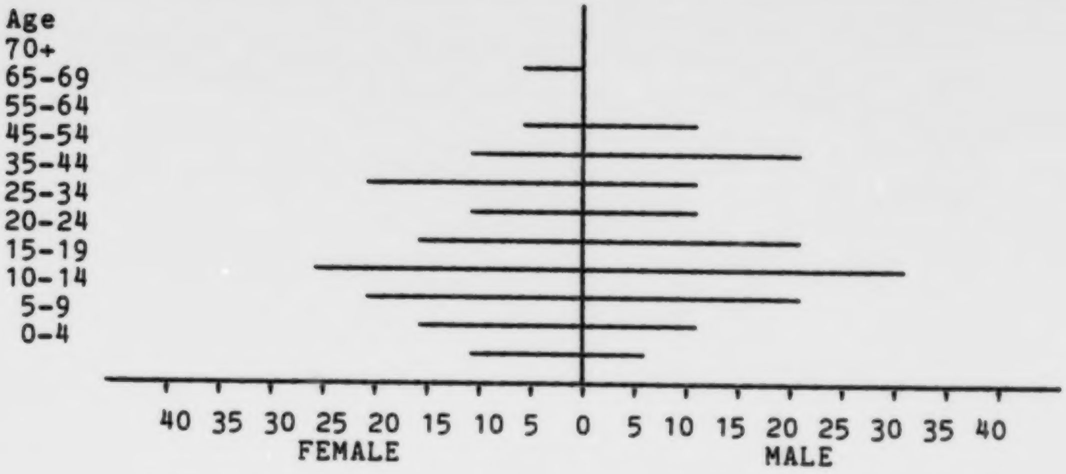
Year	Population	Increase	Growth %	Average Annual Growth %
1951	91			
1956	105	14	15.4	3.1
1961	141	36	34.3	6.9
1966	191	50	35.5	7.1
1971	294	103	53.9	10.8
1976	271	-23	-7.8	-1.6
1981	273	2	0.7	0.1

Source note: 1981 Census of Canada
West Ste. Modeste Municipal Plan

Projected Future Population Growth:

1. At 2% per annum: 1986 - 300 1991 - 328

Population Structure by Age and By Gender - 1981



No. of Females - 140 No. of Males - 133

Footnotes:

West Ste. Modeste has a fairly young population, with 64% under the age of 25.

Source Note: 1981 Census of Canada

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells X Other No

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon ____ Septic Tanks __X__ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes __X__ No _____
Landfill Site Utilized: Yes __X__ No _____
Other: Yes _____ No __X__

---

4. Police Protection

R.C.M.P.: Yes __X__ No _____

Patrolled from: ____Forteau____

---

5. Fire Protection Organized

Organized: Yes _____ No __X__

Equipment: ______________________________

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 11

Size: N/A Classrooms: 15 Teachers: N/A

---

3. Residential

(1) Number of occupied private dwellings: 50
(2) Number of houses with sewer and water: 100% have water; most have sewer
(3) Housing Condition: 25, very good; 20 need minor repair
(4) Number of owned homes: 45
(5) Number of rented homes: 5
(6) Number of single detached homes: 45
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 5.3
(9) Dwellings heated by steam or hot water: 5
(10) Dwellings heated by hot air: 15
(11) Dwellings heated with stove or space heater: 25
(12) Dwellings heated by electric heat: 0
(13) Other: ____ 0

4. Community/Institutional/Commercial/Industrial Buildings

General Store
Garage
Crafts Store
Church
Convent
Gymnasium

General Store
Gas Station
Mission
Parish Hall
Community Hall

D. ECONOMIC ACTIVITIES

1. Fishery
2. Agriculture
3. Tourism

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	CBC, CFCB
Telephone	Yes X	No	D.D.D.
High Frequency Radio	Yes	No X	

Operated By:

1982 ENERGY PROFILE

LOAD CENTER: L'Anse au Loup COMMUNITY: West St. Modeste
Capstan Island

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	576 097		234 578		574
Commercial	42 302				
Industrial					
Government	72 027				
Street Lighting	7 524				
TOTAL	697 950		234 578		574

1982 ENERGY PROFILE

LOAD CENTER: L'Anse au Loup COMMUNITY: West St. Modeste, Capstan Island

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	2 074		8 839		4 642	15 555
Commercial	152					152
Industrial						
Government	259					259
Street Lighting	27					27
TOTAL	2 513		8 839		4 642	15 993

4.6.8 REMOTE COMMUNITY ANALYSIS

Community Profiles: English Point, Fox Cove, L'Anse Amour, L'Anse au Diable

Status: Unincorporated

Location: Same Location as Communities in L'Anse au Loup Area

Comments: For each of the four communities listed above little or no information is available. English Point, L'Anse Amour and L'Anse au Diable were listed as abandoned by Statistics Canada following the 1981 Census of Canada. Electrical consumption data available from P.D.D. does not show a breakdown for any of the above communities. Recent information from Statistics Canada indicates that English Point, L'Anse Amour and L'Anse au Diable may have been erroneously included in the population count of Forteau. The only community of the four above for which any information is available is Fox Cove, which had a population of 247 in 1981. Given the limited data base available on these four communities, it is difficult to make speculative assumptions; nevertheless, it would be reasonable to assume that the economic base and energy consumption and supply patterns for these communities are similar to other communities serviced by the L'Anse au Loup diesel generating station.

4.7 REMOTE COMMUNITY ANALYSIS

Load Center:	Makkovik, Labrador
Communities Services:	Makkovik, Labrador
Status:	Incorporated
Location:	Lat: 55° 05' N
	Long: 59° 11' W

Sources of Information:

Publications and Articles

DPA Consulting Ltd., "Community of Makkovik, Labrador, Municipal Plan," June 1980.

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1981.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

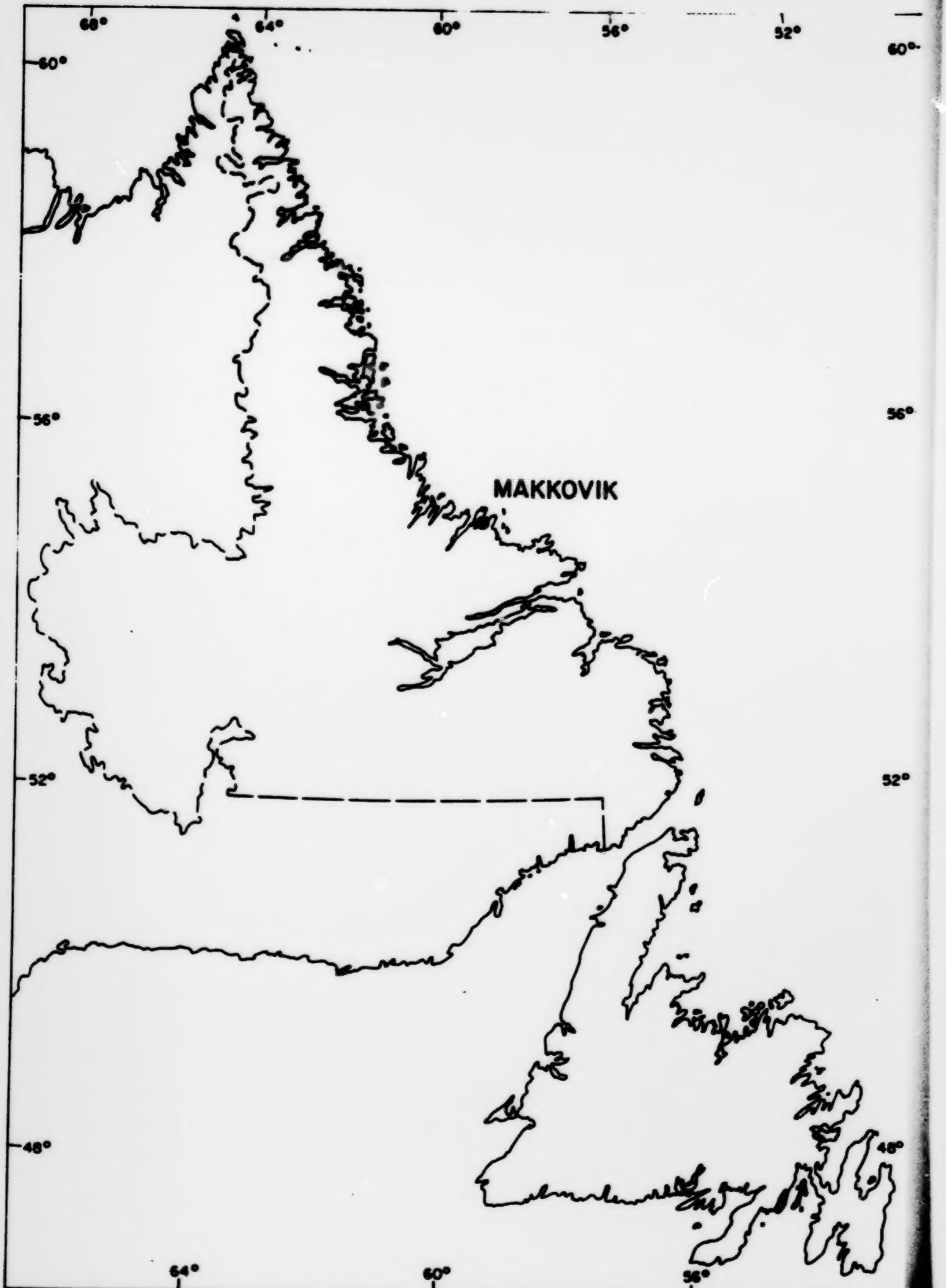
Department of Municipal Affairs and Housing, May 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.



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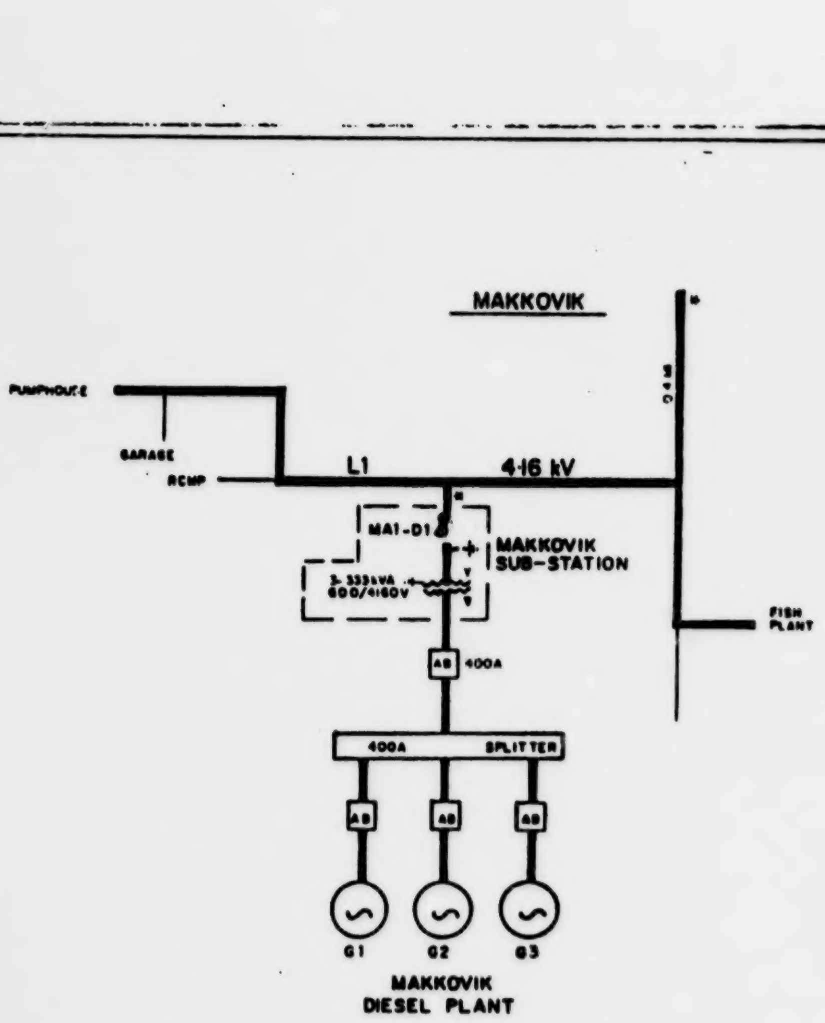
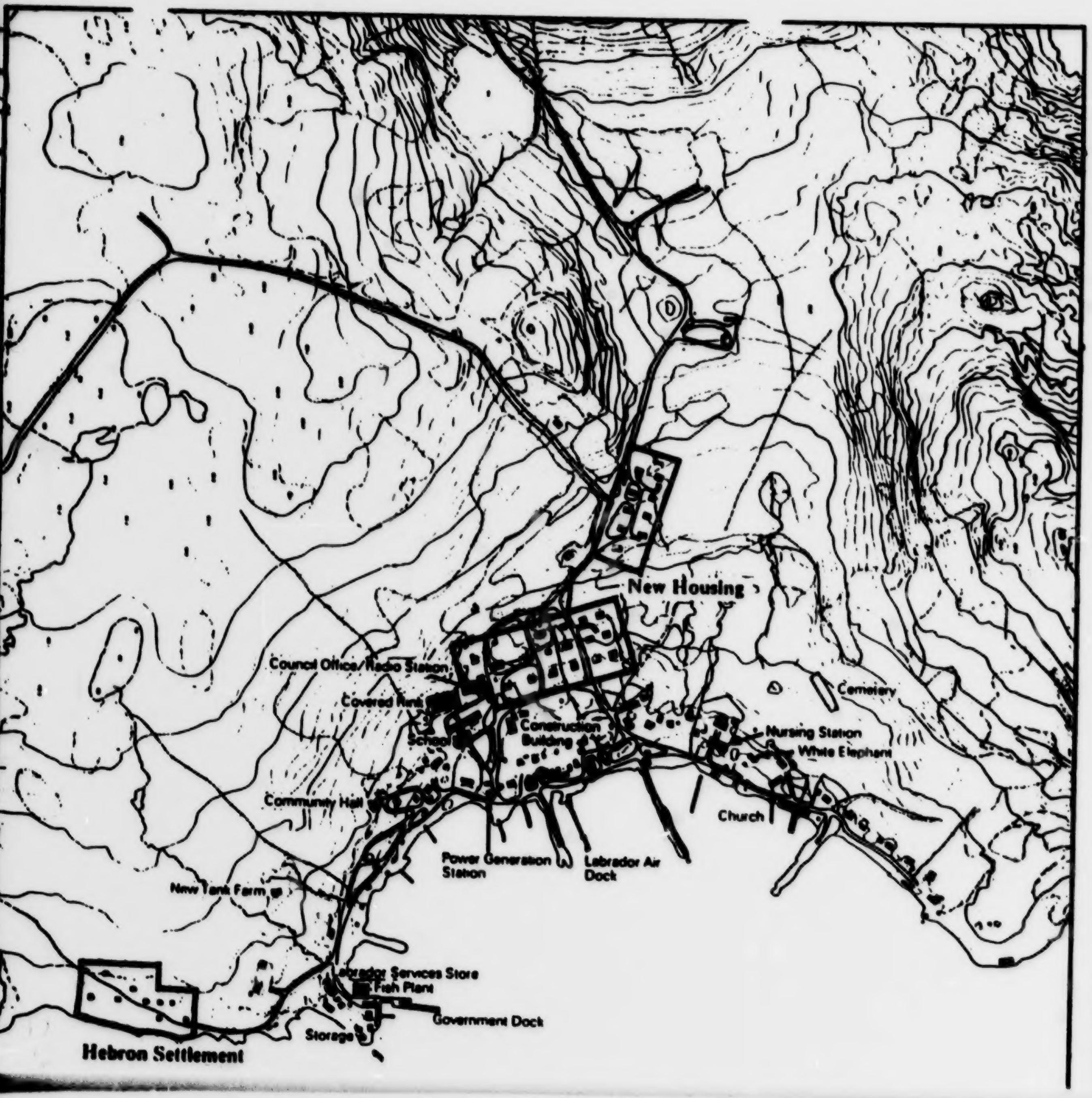

MAKKOVIK
PUMPHOUSE
GARAGE
RCMP
L1
4·16 kV
FISH PLANT
MA1-D1
MAKKOVIK SUB-STATION
3- 333kVA
600/4160V
AB
400A
400A
SPLITTER
AB
AB
AB
G1
G2
G3
MAKKOVIK DIESEL PLANT

APPROVED BY: W.F.R.	NEWFOUNDLAND AND LABRADOR HYDRO	1 of 1
DATE: 82-06-10	MAKKOVIK DISTRIBUTION SYSTEM	DWG No. 411-1
REVISION No.: 3		


New Housing
Council Office/Radio Station
Covered Rink
School
Construction Building
Nursing Station
White Elephant
Cemetery
Community Hall
Church
Power Generation Station
Labrador Air Dock
New Tank Farm
Labrador Services Store
Fish Plant
Government Dock
Storage
Hebron Settlement

Existing Land Use
Map No. 3

Makkovik, Labrador

100 0 100 200
meters

Prepared for
The Community of
Makkovik, Labrador,
and the Department of
Municipal Affairs and
Housing.

Prepared by
DPA Consulting Limited
in association with
Project Management and
Design (1974) Limited

A. History and Current Status

1. Makkovik dates back to 1860 when Torsten Anderson of Norway established a small trading post. The first permanent residents were mostly British who came as hunters, trappers and fishermen and settled in Makkovik. The community's rich fishing grounds contributed to its early growth as a supply and service centre. The fishing industry is predominant today, as a modern fish processing plant at Trap Point serves the coastline from Davis Inlet in the north to Cape Harrison in the south. In addition to the fishery, trapping and sealing play important roles in the community's economy.

2. Demographics

1981 Population: 347

Historic Population

Year	Population	Increase	Growth %	Average Annual Growth %
1971*	292			
1976	307	15	5.1	1.0
1981	347	40	13.0	2.6

Footnotes:

* The community was incorporated in 1970. The first population counts for Makkovik as a separate community were conducted in 1971.

Source note:

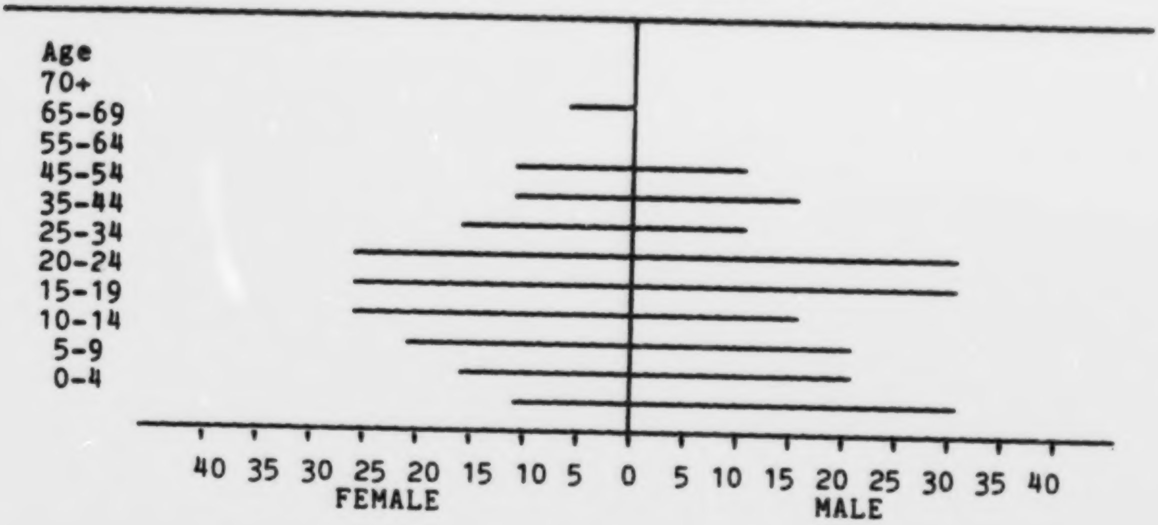
Community of Makkovik, Labrador, Municipal Plan, June 1980.

1981 Census of Canada.

Projected Future Population Growth:

1986 - 350 2000 - 475

Population Structure by Age and By Gender - 1981



No. of Females - 165   No. of Males - 182

Footnotes:

Over 60% of the population is under the age of 25; therefore there is potential for future population growth.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X   River ______   Wells ______   Other ______________

Distribution:

Pipe X   Truck ______   Individual Systems ______   None ______

Serving:

Government Buildings X   Commercial Buildings X   Residences X   Standpipes ______

Treatment:

Sedimentation ______   Filtration ______   Chlorination X
Fluoridation ______   None ______

2. Sewage

Collection System:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes X No ____
Other: Yes ____ No ____

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Hopedale

---

5. Fire Protection Organized

Organized: Yes X No ____

Equipment: Hydrants

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No _____

Size of Facility: 266.8 M^2

Staff: Doctors: _____ Nurses: 2

Other: None

---

2. Education

School located in community: Yes X No _____

Grades: Kindergarten to Grade 11

Size: _____ Classrooms: 8 Teachers: 10

---

3. Residential

(1) Number of occupied private dwellings: 75
(2) Number of houses with sewer and water: 100% have water and sewer
(3) Housing Condition: 50, very good; 20 need minor repair; 5 need major repair
(4) Number of owned homes: 65
(5) Number of rented homes: 10
(6) Number of single detached homes: 70
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 4.6
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 30
(11) Dwellings heated with stove or space heater: 45
(12) Dwellings heated by electric heat: 5
(13) Other: _____ 0

4. Community/Institutional/Commercial/Industrial Buildings

Fish Plant

Craft Centre

Variety Store

Warehouse

Confectionary Store

Community Hall

Fish Plant Storage Sheds

Retail Store

Labrador Services Store

Fuel Depot

Confectionary Store

D. ECONOMIC ACTIVITIES

1. Fishing
2. Sealing
3. Hunting and Trapping

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	pirate taped CBC
Radio	Yes X	No	local FM station poor CBC reception
Telephone	Yes X	No	D.D.D.
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	scheduled & charter
Marine	CN Coastal Boats	scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. **Owner**: Newfoundland and Labrador Hydro/Power Distribution District

2. **Diesel Type**:
1 - 250 kw Cat. with Tamper generator
1 - 250 kw Cat. with C.G.E. generator
1 - 450 kw Cat. with Cat. generator

3. **Diesel Fuel Consumption**:

	1981	1982
Annual Fuel Usage (litres)	467 139	503,287
Annual Fuel Costs	$161,934.00	$196,726.00
Cost per Litre	$0.35	$0.39
Cost Increase		11%

4. Electricity Consumption - Historical and Predicted (kwh)

1980	1233	1985	1704
1981	1173	1986	1796
1982	1463	1987	1893
1983	1536	1988	1996
1984	1617		

5. Peak Load Demand - Historical and Predicted (kwh)

1980	288	1985	363
1981	272	1986	384
1982	312	1987	407
1983	323	1988	431
1984	342		

H. ASSESSMENT OF RESOURCES - Makkovik

Small Scale Hydro Potential

There are two possible sites located on Makkovik Brook within 8 km. of the nearest transmission line. The larger site is located near Monkey Hill and has a nominal capacity of 770 kw. through a head of approximately 26 M. The smaller site, located at Makkovik Harbour, has a nominal capacity of 550 kw. through a head of 14 M.

Wood Resources

The published data base on the inventory of fuelwood resources in this area is insufficient to formulate definitive conclusions about this alternative. The Statistics Canada data base indicates that approximately 36% of householders use wood as a primary fuel. The potential to increase the use of wood as a primary or secondary fuel requires further study.

Peat Resources

No published fuel peat inventories are available for this area, and consequently, no definitive conclusions can be made about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

Small scale hydro development shows potential as an alternative to diesel generated electricity for the community of Makkovik. The site near Monkey Hill on Makkovik Brook is the preferred site for development, with a capital cost of between $1.4 and $2.1 million. The Annual Equivalent Cost for energy is estimated to be approximately $0.23 per kwh. This is competitive with diesel generated electricity, which has an Annual Equivalent Cost of energy of $0.25 per kwh.

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Makkovik COMMUNITY: Makkovik

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOO (tonnes
Residential	671 360		245 489		65
Commercial					
Industrial	234 960				
Government	316 146				
Street Lighting	11 880				
TOTAL	1 234 346		245 489		65

1982 ENERGY PROFILE

LOAD CENTER: Makkovik **COMMUNITY:** Makkovik

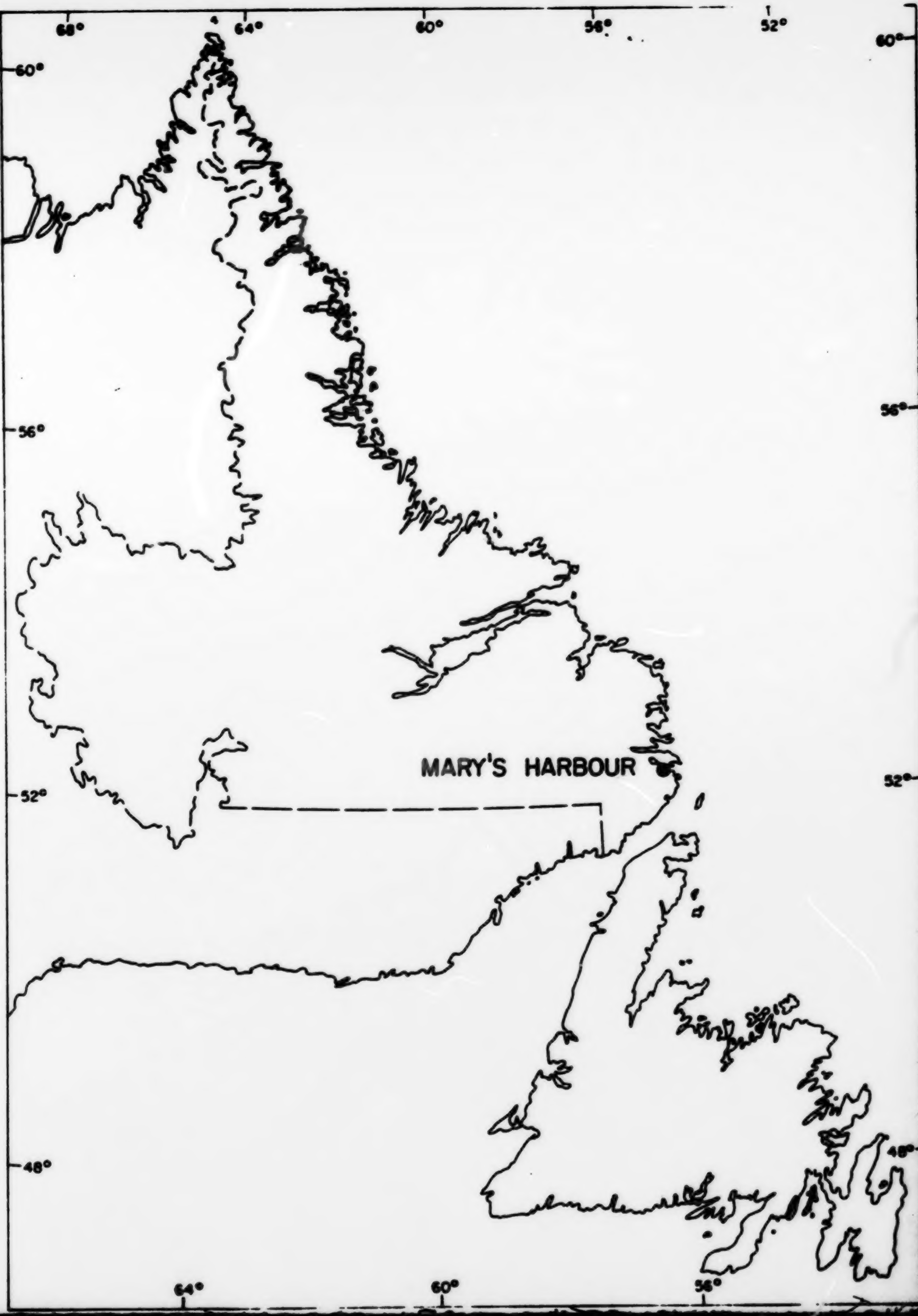
	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	2 417		9 250		5 273	16 940
Commercial						
Industrial	846					846
Government	1 138					1 138
Street Lighting	43					43
TOTAL	4 444		9 250		5 273	18 967

4.8 REMOTE COMMUNITY ANALYSIS

Load Centre: Mary's Harbour, Labrador

Communities Serviced: Mary's Harbour, Lodge Bay

Comments: The Mary's Harbour diesel generating plant services the communities of Mary's Harbour and Lodge Bay. Profile information for these two communities will be presented separately beginning with Mary's Harbour.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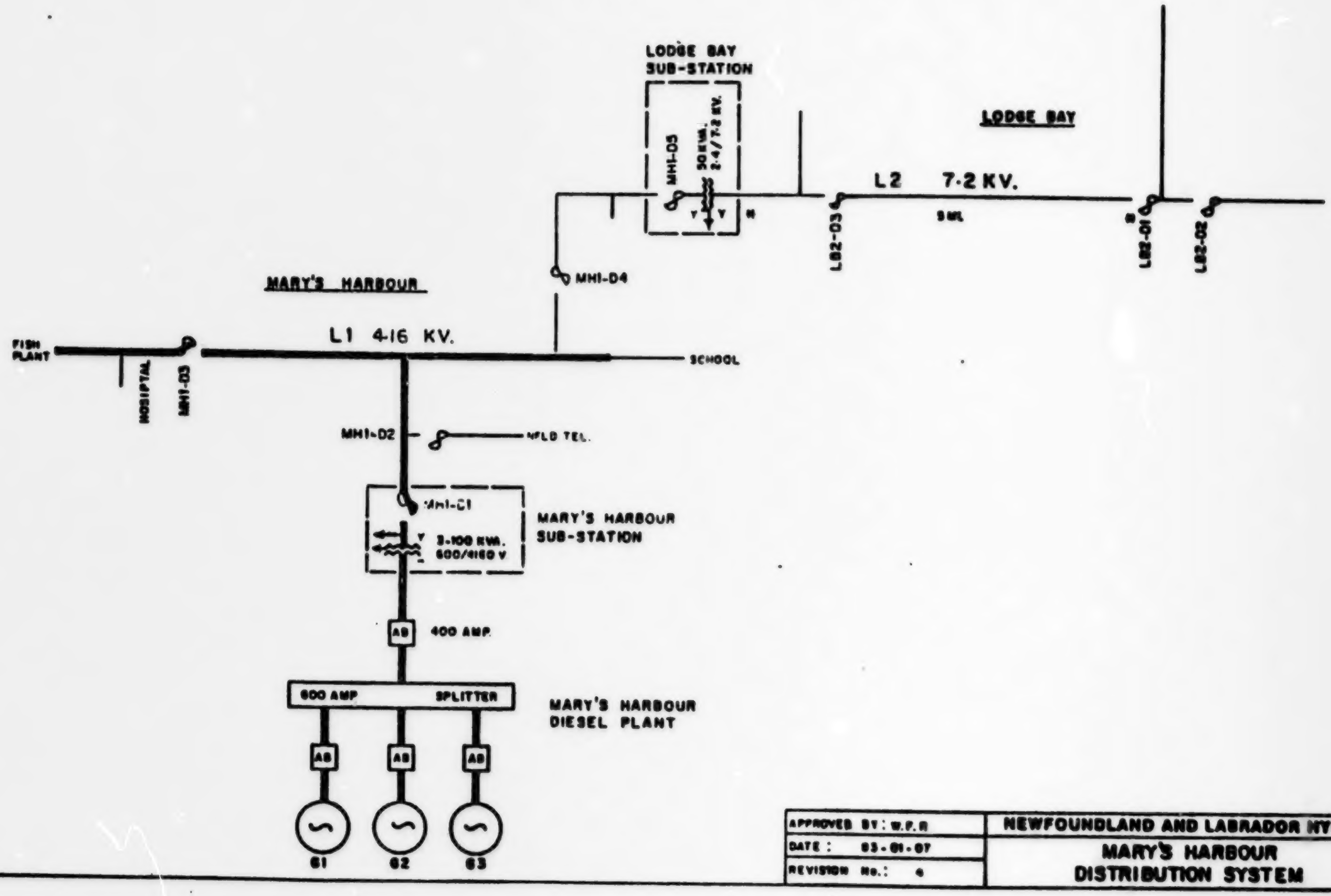
MARY'S HARBOUR


LODGE BAY SUB-STATION
MH1-05
50 KVA.
2.4/7.2 KV.
Y
Y
LODGE BAY
L2 7.2 KV.
LB2-03
5 MI.
LB2-01
LB2-02
MH1-D4
MARY'S HARBOUR
L1 4.16 KV.
FISH PLANT
HOSPITAL
MH1-D3
SCHOOL
MH1-D2
NFLD TEL.
MH1-C1
3-100 KVA.
600/4160 V
MARY'S HARBOUR SUB-STATION
AB
400 AMP.
600 AMP
SPLITTER
MARY'S HARBOUR DIESEL PLANT
AB
AB
AB
G1
G2
G3

APPROVED BY: W.P.R.	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 OF 1
DATE: 83-01-07	MARY'S HARBOUR DISTRIBUTION SYSTEM	DWG. No. 302-1
REVISION No.: 4		

4.8.1 REMOTE COMMUNITY ANALYSIS

Community Profile:	Mary's Harbour
Status:	Incorporated
Location:	Lat: 52° 19' N
	Long: 55° 49' W

Sources of Information:

Publications and Articles

Arco Co. Ltd. and Terpstra Engineering Ltd., "Mary's Harbour Municipal Plan," February 1980.

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

A. History and Current Status

1. Mary's Harbour was originally settled in the 1700's as a seal and salmon operation. It was also used as a winter residence for people in the community of Battle Harbour. The community has relied traditionally on trapping, forest resources and the fishery. At present the fishery is the mainstay of the economy, with summer migration to the fishing stations of Battle Harbour, Indian Cove, Matthews Cove, Camp Island, Carrol's Cove and Henley Harbour.

   Mary's Harbour acts as a sub-regional administrative centre for this area of the southeastern Labrador coast. The community has a branch office of the provincial Department of Social Services and a detachment of the R.C.M.P. which services the communities from Charlottetown to Lodge Bay. The medical facilities serve communities from Fox Harbour to Lodge Bay. With the availability of an airstrip it is anticipated that Mary's Harbour may increase its role as an administrative centre for the region. In addition, the community has a relatively young population with over 70% being less than 45 years of age. Both these factors indicate there is potential for maintained growth in the community of Mary's Harbour.

2. Demographics

1981 Population: 408

Historic Population:

Year	Population	Increase	Growth %	Average Annual Growth %
1945	53			
1951	83	30	57	9.5
1956	212	129	155	31.0
1961	264	52	25	5.0
1966	*47	-217	-82	-16.4
1971	134	87	185	37.0
1976	363	229	171	34.2
1981	408	45	12	2.0

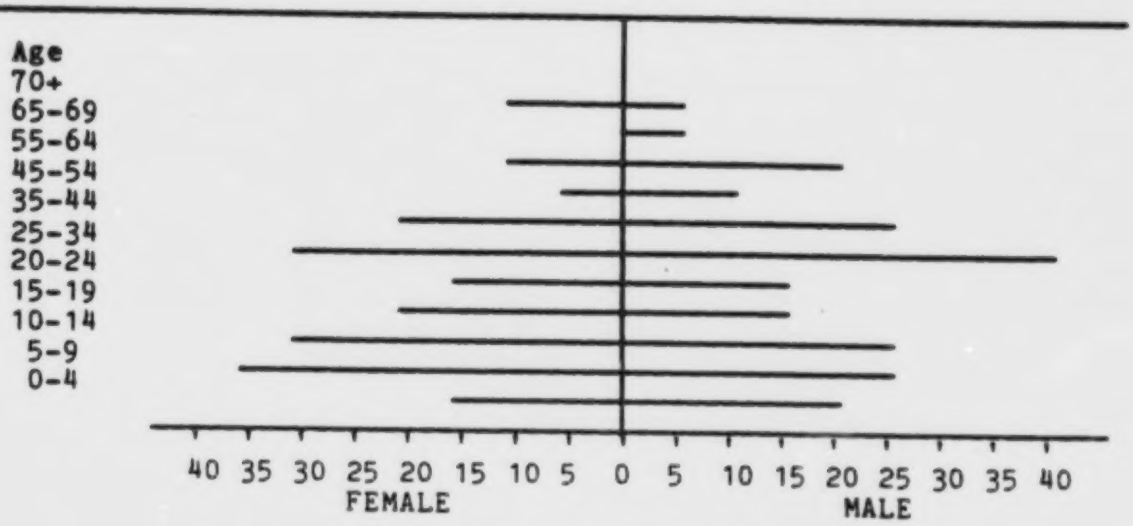
The erratic trend could be due to real population changes, or difficulty in obtaining accurate census data due to the seasonal migration of fishermen to summer stations.

Source Note: Mary's Harbour Municipal Plan
1981 Census of Canada

Projected Future Population Growth:

1985 - 500 1990 - 625

Population Structure by Age and by Gender - 1981



No. of Females - 194 No. of Males - 214

Footnotes

There is a fairly young population; therefore there is potential for sustained population growth in the community.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River X Wells X Other ________

Distribution:

Pipe X Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ___ Filtration ___ Chlorination ___
Fluoridation ___ None X

---

2. Sewage

Collection System:

Pipe X Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks X Treatment Plant ___ None ___

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfille Site Utilized: Yes ____ No X
Other: open dump Yes X No ____

---

4. Police Protection

R.C.M.P.: Yes X No

Patrolled from: Mary's Harbour

---

5. Fire Protection Organized:

Organized: Yes No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No

Size of Facility: 588.6 M^2

Staff: Doctors 1 Nurses 2 Nursing Assistants

Other 1 visiting I.G.A. doctor

---

2. Education

School located in community: Yes X No

Grades: Kindergarten to Grade 11

Size: N/A Classrooms: N/A Teachers: 7

3. **Residential**

(1) Number of occupied private dwellings: 85
(2) Number of houses with sewer and water: 50% have piped sewage. 100% have access to wells in summer; 25% in winter.
(3) Housing Condition: very good, 26%; good, 41%; fair, 26%; poor, 7%
(4) Number of owned homes: 80
(5) Number of rented homes: 5
(6) Number of single detached homes: 80
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 4.6
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 25
(11) Dwellings heated with stove or space heater: 60
(12) Dwellings heated by electric heat: 0
(13) Other: ______ 0

4. Community/Institutional/Commercial/Industrial Buildings

General Store
General Store
General Store
General Store
General Store
General Store
General Store
Plumbing and Heating Shop
Skidoo and Appliance Shop
Skidoo and Appliance Shop
Church
Community Hall

D. ECONOMIC ACTIVITIES

1. Fishing
2. Forestry
3. Trapping

27

E. COMMUNICATION LINKS

	Yes	No	Comments
Post Office	X		
Television	X		CBC
Radio	X		various signals
Telephone	X		exchange service
High Frequency Radio		X	

Operated By: ____________________

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	scheduled & charter
Marine	CN Coastal Boats	scheduled
Bus	Not Applicable	
Other	Not Applicable	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. **Owner**: Newfoundland Labrador Hydro/Power Distribution District

2. **Diesel Type**: 2 - 250 kw Cat. with B.B.C. Generators
   1 - 300 kw Cat. with Tamper Generator

3. **Diesel Fuel Consumption**:

	1981	1982
Annual Fuel Use (litres)	328 915	351,400
Annual Fuel Cost	$111,852.00	$138,026.00
Cost per Litres	$0.34	$0.39
Cost Increase		15%

4. **Electricity Demand - Historical and Predicted (mwh)**:

1980	813	1985	1143
1981	854	1986	1200
1982	990	1987	1258
1983	1040	1988	1320
1984	1090		

5. **Peak Load - Historical and Predicted (kw)**:

1980	270	1985	388
1981	288	1986	407
1982	345	1987	428
1983	352	1988	449
1984	369		

H. ASSESSMENT OF RESOURCES - Mary's Harbour - Total Load Center

Small Scale Hydro Potential

There are three possible sites within approximately 7 km. of the nearest transmission line. One is on a small river, with an estimated capacity of 130 kw. through a head of approximately 4 M.

Two larger sites are located on Mary's Harbour River. The larger of the two is close to the community, with an estimated capacity of 1,560 kw. through a head of approximately 4 M. The smaller site has an estimated capacity of 730 kw. through a head of approximately 6 M. Some potential exists to increase the head of this site, thereby increasing capacity. This site is located approximately 7 km. from the community.

Wood Resources

A substantial quantity of fuelwood exists in the Mary's Harbour area. The supply is probably in excess of the community's needs. Information obtained from Statistics Canada indicates that this resource is currently being used by 73% of the residents of both Mary's Harbour and Lodge Bay. The potential to increase the use of wood as a primary or secondary fuel requires further study.

Peat Resources

No published fuel peat inventories are available for this area, and consequently, no definitive conclusions can be made about this alternative.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating - Heat Recovery

Information obtained from Newfoundland and Labrador Hydro indicates that there is potential for a heat recovery project in Mary's Harbour at the community medical clinic, which is located close to the diesel plant.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

Of the three possible small scale hydro sites near the community of Mary's Harbour, the site near the community on Mary's River is the most promising. The estimated capital cost to develop this site is between $1.4 and $2.1 million. This yields an Annual Equivalent Cost of Energy of approximately $0.34 per kwh. While this is somewhat higher than the cost for diesel generated electricity, the cost is based on the mean value of the capital cost estimates. If capital costs for the development could be kept near $1.4 million, the Annual Equivalent Cost for Energy from the development would be competitive with diesel generation. For this reason, the potential for small scale hydro development at Mary's Harbour warrants closer examination.

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

The community medical clinic in Mary's Harbour is within close proximity to the diesel plant and is a potential candidate for a heat recovery project.

1982 ENERGY PROFILE

LOAD CENTER: Mary's Harbour COMMUNITY: Mary's Harbour

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	611 497		136 383		1 696
Commercial	23 555				
Industrial					
Government	172 735				
Street Lighting	15 444				
TOTAL	823 231		136 383		1 696

1982 ENERGY PROFILE

LOAD CENTER: Mary's Harbour **COMMUNITY:** Mary's Harbour

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	2 201		5 139		13 717	21 057
Commercial	85					85
Industrial						
Government	622					622
Street Lighting	56					56
TOTAL	2 964		5 139		13 717	21 820

4.8.2 REMOTE COMMUNITY ANALYSIS

Community Profile: Lodge Bay, Labrador

Status: Unincorporated

Location: Lat: 52° 19' N
Long: 55° 49' W

Sources of Information:

Publications and Articles

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

A. History and Current Status

1. Lodge Bay was originally settled in the 1700's as a seal and salmon operation. At present the fishery is the mainstay of the economy.

2. Demographics

1981 Population: 124

Historic Population

Year	Population	Increase	Growth %	Average Annual Growth %
1976	129			
1981	124	-5	-4%	-0.8%

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ___ River X Wells X Other None

Distribution:

Pipe X Truck ___ Individual Systems X None ___

Serving:

Government Buildings ___ Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ___ Filtration ___ Chlorination ___
Fluoridation ___ None X

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings ____ Commercial Buildings ____ Residences __X__

Disposal:

Lagoon __X__ Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes ____ No __X__
Landfill Site Utilized: Yes ____ No __X__
Other: Yes ____ No __X__

---

4. Police Protection

R.C.M.P.: Yes __X__ No ____

Patrolled from: Mary's Harbour

---

5. Fire Protection Organized

Organized: Yes ____ No __X__

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ________

Staff: Doctors: ____ Nurses: ____

Other: ________

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 9

Size: N/A Classrooms: N/A Teachers: 3

---

3. Residential

(1) Number of occupied private dwellings: N/A
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: N/A
(5) Number of rented homes: N/A
(6) Number of single detached homes: N/A
(7) Number of single attached homes: N/A
(8) Average number of persons per private household: N/A
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: ________ N/A

---

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

					Comments
Post Office	Yes	X	No		
Television	Yes	X	No		
Radio	Yes	X	No		
Telephone	Yes	X	No		
High Frequency Radio	Yes	X	No		

Operated By: ______

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	Scheduled & Charter
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: Mary's Harbour COMMUNITY: Lodge Bay

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	84 373		38 187		496
Commercial	1 154				
Industrial					
Government					
Street Lighting					
TOTAL	85 527		38 187		496

1982 ENERGY PROFILE

LOAD CENTER: Mary's Harbour COMMUNITY: Lodge Bay

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	304		1 439		4 012	5 755
Commercial	4					4
Industrial						
Government						
Street Lighting						
TOTAL	308		1 439		4 012	5 759

4.9 REMOTE COMMUNITY ANALYSIS

Load Centre:	Mud Lake, Labrador
Communities Serviced:	Mud Lake
Status:	Unincorporated
Location:	Lat: 53° 17' N
	Long: 60° 01' W

Sources of Information:

Publications and Articles

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

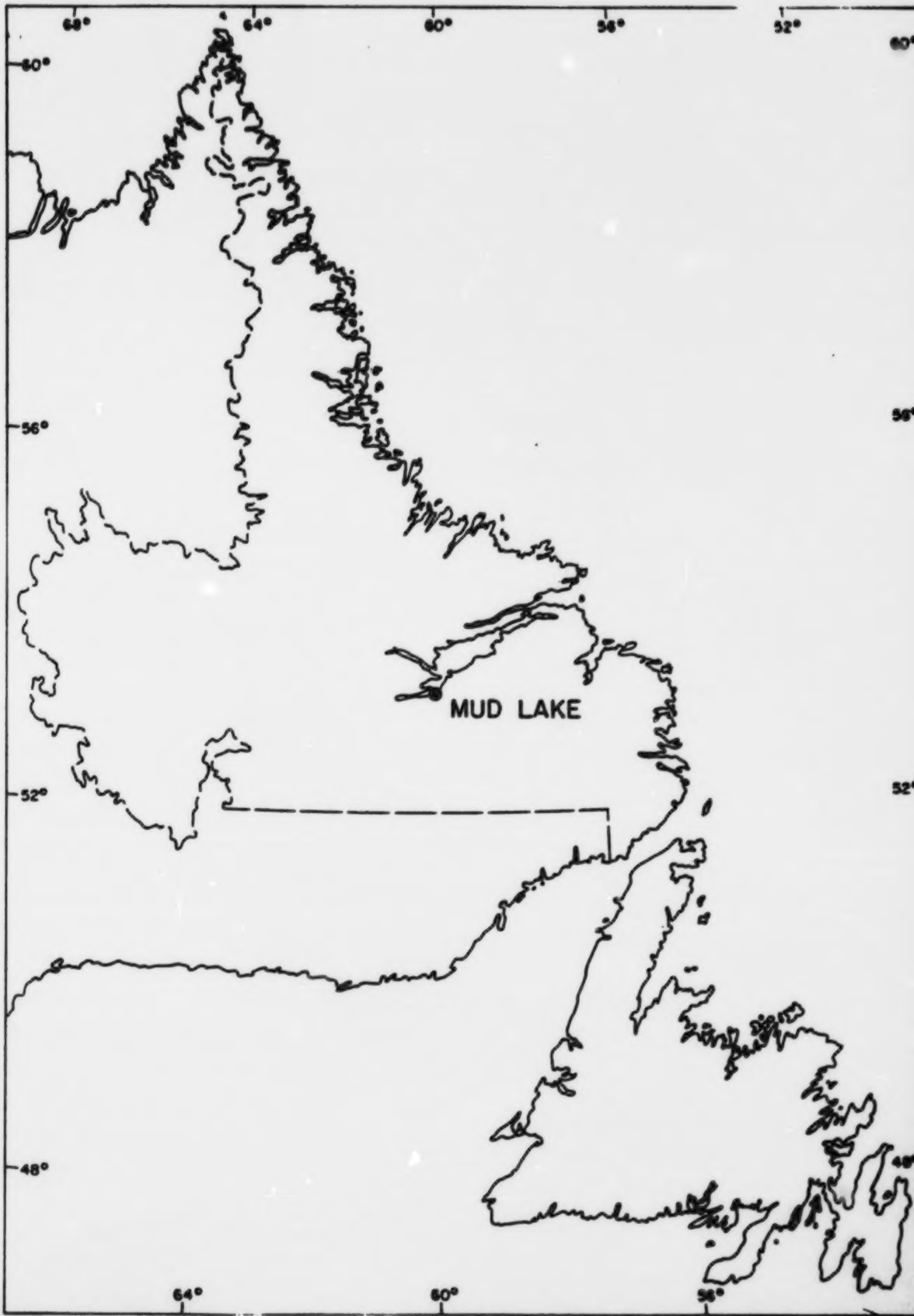
Department of Municipal Affairs and Housing, May 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.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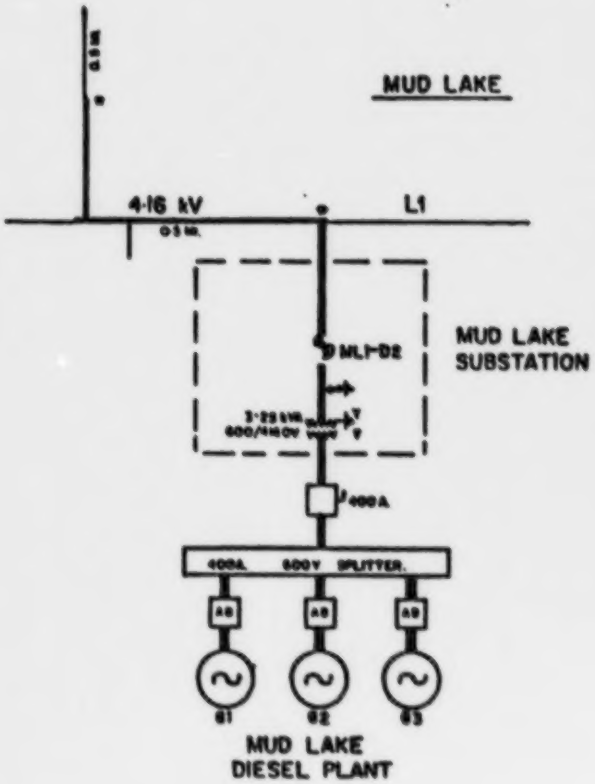

MUD LAKE
0.5 MI.
4.16 kV
0.3 MI.
L1
MUD LAKE
SUBSTATION
ML1-D2
3-25 kVA
600/4160V
400A
400A. 600V SPLITTER.
AB
AB
AB
G1
G2
G3
MUD LAKE
DIESEL PLANT

APPROVED BY W.F.R.	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 OF 1
DATE : 88/06/20 REVISION No.: 3	MUD LAKE DISTRIBUTION SYSTEM	DWG. No. 403-1

A. History and Current Status

1. Mud lake was settled in the early 1800's. The location was chosen for its good shelter, fishing, timber and sandy soil. It was also located on the routes to the trapping areas of the Mealy Mountains and the upper Grand River. Around 1900, a large sawmilling operation was established. Ships were able to anchor close to the mill, and over 12 million board feet were exported by 1909.

As the population increased, the community expanded. The Methodist Church transferred its permanent headquarters to Mud lake in 1905. When the lumber company liquidated in 1915, and the I.G.A. hospital moved to North West River in 1916, the community evolved into a fishing and trapping village.

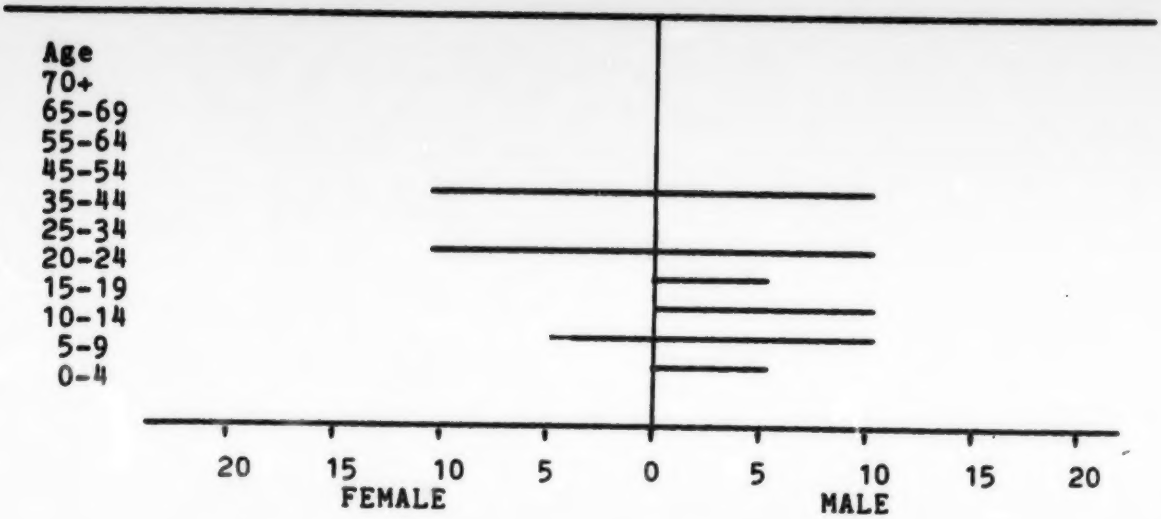
2. Demographics

1981 Population: 72

Projected Future Population Growth:

At 2% per annum: 1986 - 79 1991 - 86

Population Structure by Age and By Gender - 1981



No. of Females - 22 No. of Males - 50

Footnotes

There is a fairly young population. Seventy-three percent is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River _X_ Wells _X_ Other ________

Distribution:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings ____ Commercial Buildings _X_ Residences _X_ Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None _X_

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings ____ Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks X Treatment Plant ____ None ____

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes ____ No X
Other: open dump Yes X No ____

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Happy Valley

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ____

Other: ____________

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 8

Size: N/A Classrooms: N/A Teachers: 2

---

3. Residential

(1) Number of occupied private dwellings: 15
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 15
(5) Number of rented homes: 5
(6) Number of single detached homes: 20
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 4.2
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: ____________ N/A

---

4. Community/Institutional/Commercial/Industrial Buildings

Groceteria

Felsburg Metal Works

Church

D. ECONOMIC ACTIVITIES

1. Fishery

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	uses Happy Valley
Television	Yes X	No	CBC
Radio	Yes X	No	CBC, CFLN
Telephone	Yes X	No	D.D.D.
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Applicable	
Marine	C.N.	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles		X	
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 1 - 60 kw Deutz with Tamper Generator
2 - 50 kw Cat. with Tamper Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	81 351	87,011
Annual Fuel Cost	$22,509.00	$26,604.00
Cost per Litre	$0.28	$0.31
Cost Increase		11%

4. Electricity Demand - Historical and Predicted (mwh):

1980	152	1985	221
1981	145	1986	231
1982	163	1987	231
1983	201	1988	231
1984	210		

5. Peak Load Demand - Historical and Predicted (kw):

1980	45	1985	80
1981	44	1986	84
1982	58	1987	84
1983	72	1988	84
1984	76		

H. ASSESSMENT OF RESOURCES - Mud Lake

Small Scale Hydro Potential

Available information indicates that there is no potential for hydro development in this area.

Wood Resources

The Mud Lake area contains vast mature forests of black spruce and balsam fir. The area lends moderate to severe limitations to the growth of commercial forests. Soils range from deep well-drained to shallow and infertile. Sustainable growth is 70 to 90 $ft.^3$ per acre per year adjacent to the west side of Mud Lake and along the Churchill River, while most of the area to the east and south has a potential for growth of 31 to 50 $ft.^3$ per acre per year. Statistics Canada information indicates that approximately 41% of households use wood as a primary heating fuel. The potential to increase the use of wood as a primary and secondary fuel requires further study.

Peat Resources

Very little peatland exists within 5 km. of Mud Lake. About 10 km. to the southwest several large bogs exist that cover hundreds of hectares. Also, much bogland lies 15 to 20 km. to the east, and these deposits cover hundreds of hectares. This resource has not been inventoried to date but shows great potential as a source of fuel and should be examined further.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

Both fuelwood and peat show significant potential in the Mud Lake area. By virtue of its proximity to the community and substantial sustainable growth, fuelwood appears to be the logical first choice alternative. Additional research and analysis on wood, peat, wind and the potential for conservation is nevertheless required in order to seriously evaluate the potential contribution of these options to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Mud Lake COMMUNITY: Mud Lake

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	119 822		49 098		157
Commercial					
Industrial					
Government	13 687				
Street Lighting	1 188				
TOTAL	134 697		49 098		157

1982 ENERGY PROFILE

LOAD CENTER: Mud Lake COMMUNITY: Mud Lake

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	431		1 850		1 270	3 551
Commercial						
Industrial						
Government	49					49
Street Lighting	4					4
TOTAL	485		1 850		1 270	3 604

4.10 REMOTE COMMUNITY ANALYSIS

Load Center: Nain, Labrador

Communities Serviced: Nain, Labrador

Status: Incorporated

Location: 56° 32' N
61° 41' W

Sources of Information:

Publications and Articles

DPA Consulting Ltd. and Provincial Planning Office of the Department of Municipal Affairs, "Nain Municipal Plan," November 1981.

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1981.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 198

Royal Canadian Mounted Police, June 1983.

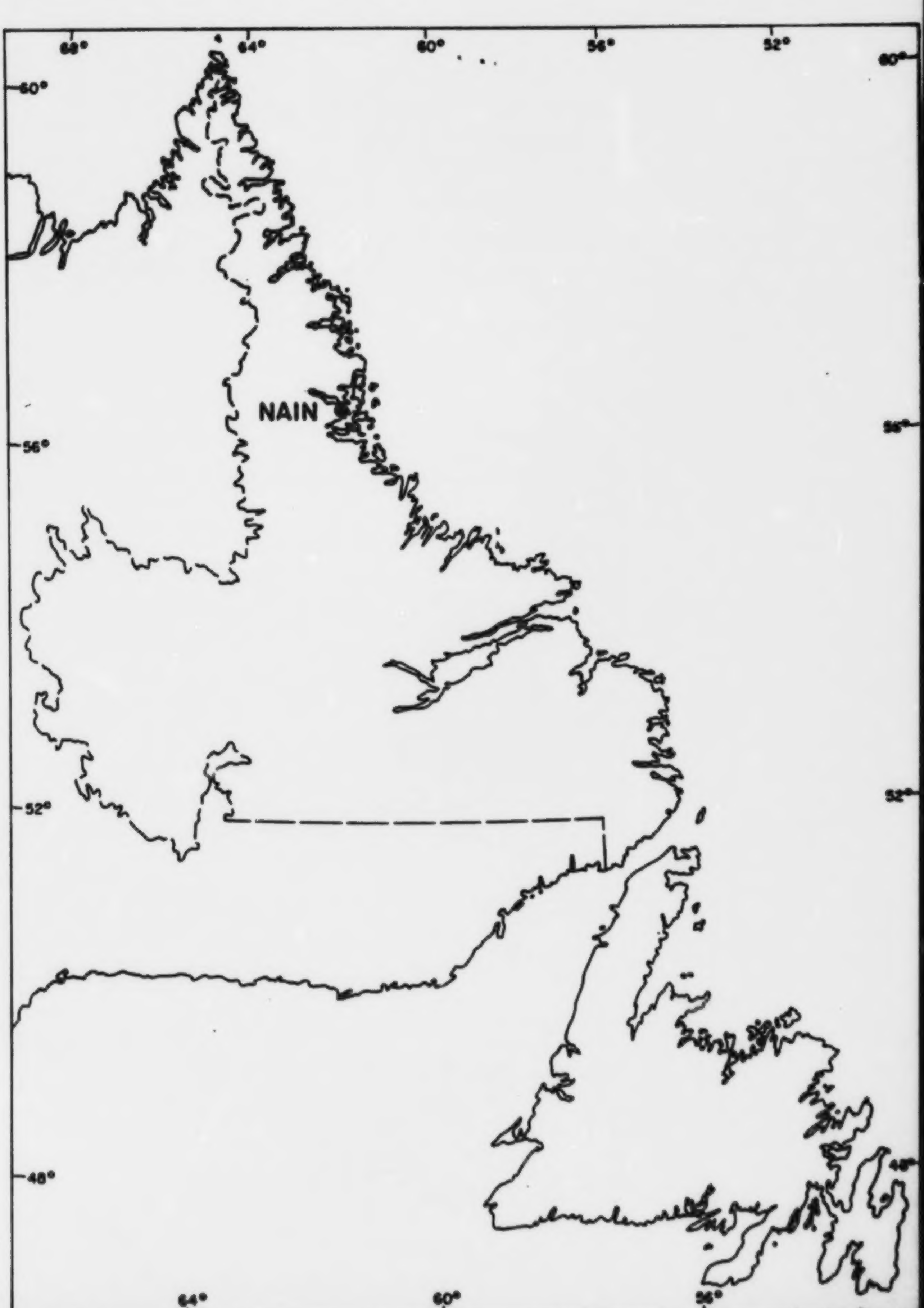
Woodward's Oil Limited, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.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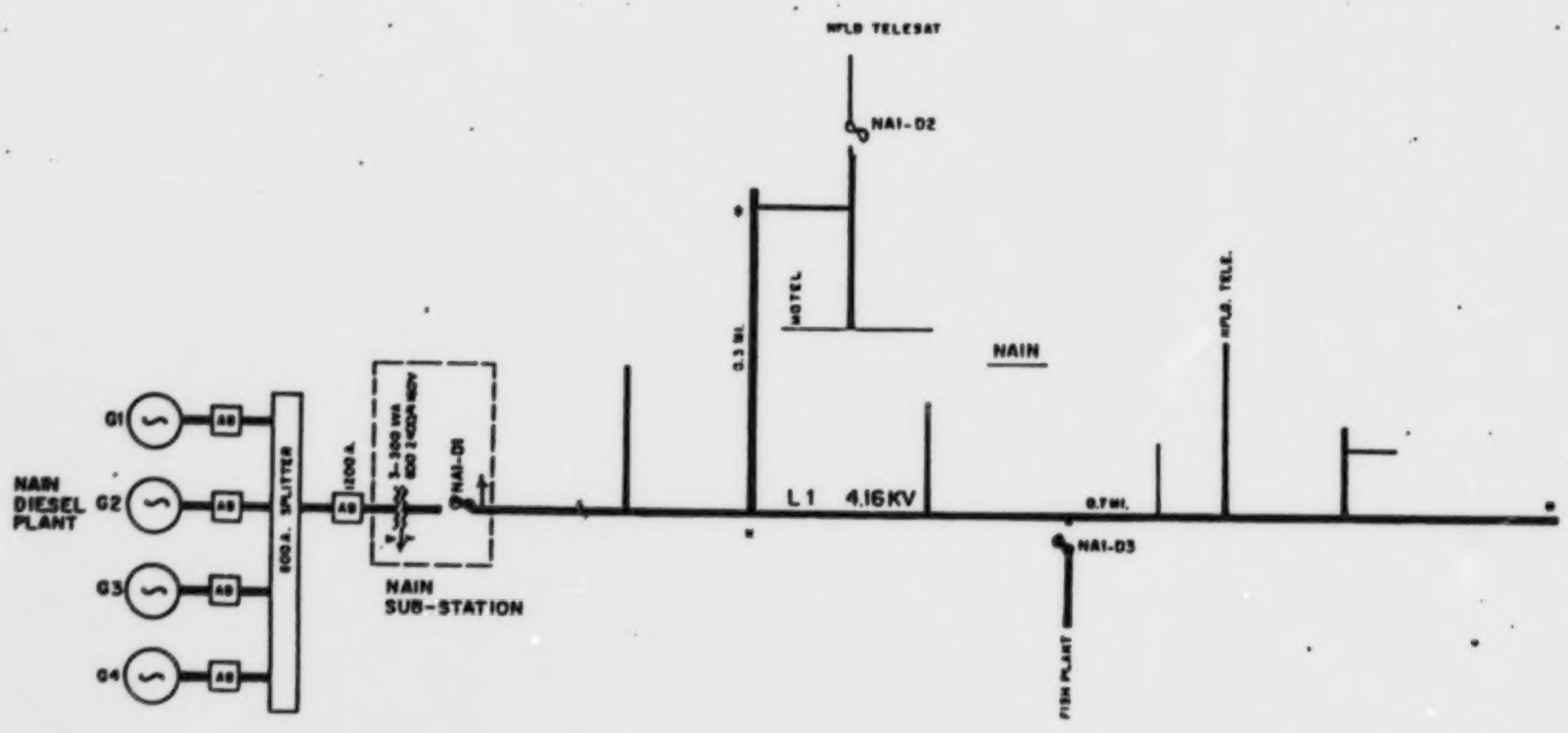
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NFLD. TELE.
NAIN DIESEL PLANT
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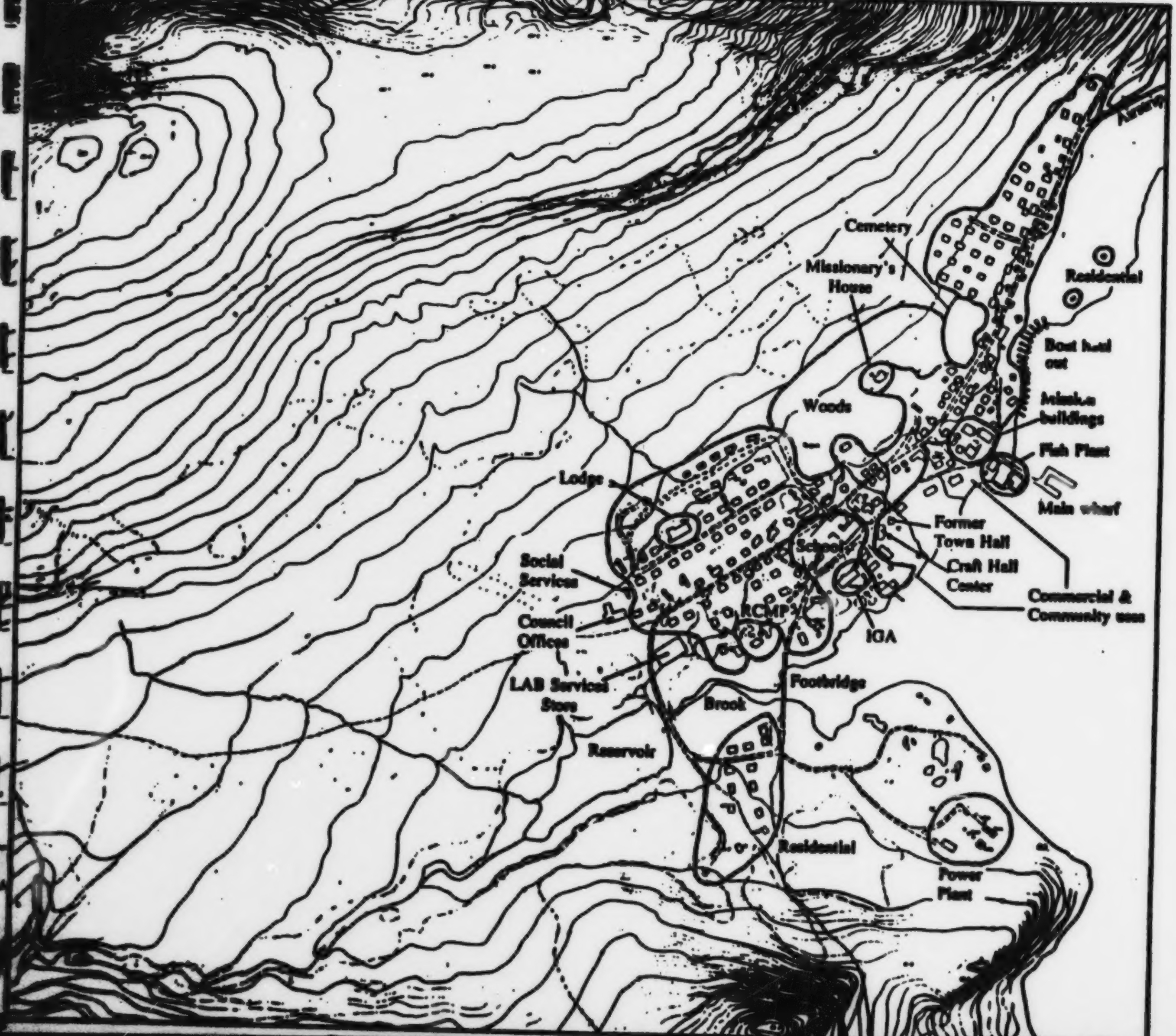
G2
G3
G4
AB
600A. SPLITTER
1200A.
3-300 kVA
600 2400/4160Y
NAI-01
NAIN SUB-STATION
L1 4.16KV
0.7 MI.
NAI-03
FISH PLANT

APPROVED BY: W.F.R	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 OF 1
DATE: 83-06-02	NAIN DISTRIBUTION SYSTEM	DWG No 402-1
REVISION No.: 0		

old 415-1


Cemetery
Missionary's House
Residential
Boat haul out
Mission buildings
Woods
Fish Plant
Lodge
Main wharf
Former Town Hall
School
Craft Hall Center
Social Services
Commercial & Community uses
RCMP
Council Offices
IGA
LAB Services Store
Footbridge
Brook
Reservoir
Residential
Power Plant

Map No. 3

Nain

Existing Land Use

100 0 100 200

meters

Prepared by
DPA Consulting Limited

A. History and Current Status

1. Nain is the northern-most permanent community in Labrador. It was established in 1771 as a Moravian settlement. Most of the Inuit and settlers of Nain migrated inland in the winter for trapping and to the coastal bays in the summer for fishing. Seasonal migration is still a factor today.

As the Moravian missionaries were the only permanent European settlers, they controlled all aspects of community life until 1926. They operated community stores, where they purchased cod, fur, seal oil and skins in exchange for clothing, guns and other household goods. In 1926 the store was leased to the Hudson's Bay Company for 21 years and was subsequently assumed by the Department of Rural Development in the 1940's.

Medical and educational services that were originally provided by the Moravians have now been taken over by the International Grenfell Association and the Labrador East Integrated School Board.

Economic growth prospects for the next decade are good. The traditional activities of fishing, hunting and trapping are expected to continue. However, it is expected that the exploitation of marine resources, some growth in local agriculture and the promotion of tourism will stimulate the local economy.

2. Demographics

1981 Population: 938

Historic Population

Year	Population	Increase	Growth %	Average Annual Growth %
1971	710			
1973	782	72	10	5.0
1976	812	30	4	1.3
1977	840	28	3	3.0
1978	900	60	7	7.0
1981	938	38	4	1.3

Footnotes:

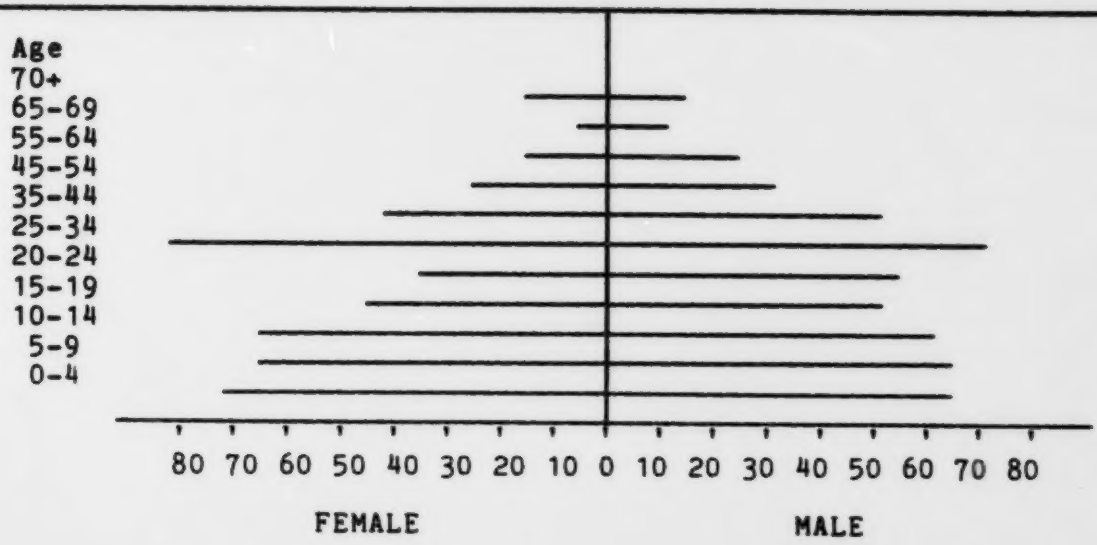
* The population has grown at a substantial rate in recent years and is expected to continue to grow, especially if a water and sewer system is installed.

Source note: Nain Municipal Plan, November 1981

Projected Future Population Growth:

1986 - 1100   1991 - 1250   2001 - 1500

Population Structure by Age and By Gender - 1981*



No. of Females - 450   No. of Males - 488

Footnotes:

* There is a large young population: Sixty percent of the community's population is under 25. Therefore, there is great potential for sustained population growth in the community.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ____ Wells X Other Reservoir

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination X
Fluoridation ____ None ____

2. Sewage

Collection System:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

3. Solid Waste Disposal

Garbage Collection Organized:	Yes X	No ____
Landfill Site Utilized:	Yes X	No ____
Other:	Yes ____	No X

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Nain

5. Fire Protection Organized

Organized: Yes X No ____

Equipment: gasoline-driven pump

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No ____

Size of Facility: 576.7 M^2

Staff: Doctors: ____ Nurses: 5
Nursing Assistants: 4
Other: Visited regularly by doctors and a dentist from Northwest River

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 11

Size: N/A Classrooms: 11 Teachers: 19

3. Residential

(1) Number of occupied private dwellings: 190
(2) Number of houses with sewer and water: 100%
(3) Housing Condition: N/A
(4) Number of owned homes: 135
(5) Number of rented homes: 55
(6) Number of single detached homes: 165
(7) Number of single attached homes: 25
(8) Average number of persons per private household: 5.0
(9) Dwellings heated by steam or hot water: 5
(10) Dwellings heated by hot air: 95
(11) Dwellings heated with stove or space heater: 80
(12) Dwellings heated by electric heat: 0
(13) Other: Wood 5

4. Community/Institutional/Commercial/Industrial Buildings

General Store
General Store
General Store
Confectionary Store
Take-Out
Snowmobile Shop
Snowmobile Shop
Medical Clinic
Church
Fuel Agent
Lounge and Hotel
Craft Centre
Community Hall
Fish Plant
Labrador Services Store
Bakery
School

D. ECONOMIC ACTIVITIES

1. Fishing/Fish Processing
2. Hunting
3. Trapping
4. Crafts
5. Services
6. House Construction

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	AOP 1LO
Television	Yes X	No	CBC from Newfoundland
Radio	Yes X	No	CBC from Happy Valley
Telephone	Yes X	No	D.D.D.
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	scheduled & charter
Marine	CN Coastal Boats	scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
   - 1 - 300 kw Cat. with Tamper generator
   - 1 - 450 kw Detroit with Kohler generator
   - 1 - 300 kw Cat. with B.B.C. generator
   - 1 - 300 kw Cat. with Cat. generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Usage (litres)	766 308	735,490
Annual Fuel Costs	$260,811.00	$287,853.00
Cost per Litre	$0.34	$0.39
Cost Increase		15%

4. Electricity Demand - Historical and Predicted (mwh):

1980	2271	1985	2108
1981	2127	1986	2108
1982	2108	1987	2108
1983	2108	1988	2108
1984	2108		

5. Peak Load Demand - Historical and Predicted (kw):

1980	448	1985	424
1981	480	1986	424
1982	424	1987	424
1983	424	1988	424
1984	424		

H. ASSESSMENT OF RESOURCES - Nain

Small Scale Hydro Potential

Available information indicates that there is no potential for hydro development in this area.

Wood Resources

The published data base on the inventory of fuelwood resources in this area is insufficient to formulate definitive conclusions about this alternative. The Statistics Canada data base indicates that approximately 32% of householders use wood as a primary fuel. The potential to increase the use of wood as a primary or secondary fuel requires further study.

Peat Resources

No published fuel peat inventories are available for this area, and consequently, no definitive conclusions can be made about this alternative.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is potential for heat recovery in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

There is little information available on the indigenous energy resources in the Nain area. Nain is located on a flat coastal area and, as such, there is no potential for small scale hydro development unless very costly dams are constructed to develop sufficient head.

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

A new school for the community of Nain is currently in the design stage. This school is to be located in close proximity to the existing diesel generating plant in the community, and it could be a candidate for waste heat recovery from the cooling water of the plant. The necessary systems to accomplish this could be incorporated into the design of the school.

1982 ENERGY PROFILE

LOAD CENTER: Nain COMMUNITY: Nain

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWO (tonne
Residential	1 226 752		709 190		1 5
Commercial	59 579				
Industrial	110 880				
Government	482 046				
Street Lighting	26 136				
TOTAL	1 905 393		709 190		1 56

1982 ENERGY PROFILE

LOAD CENTER: Nain COMMUNITY: Nain

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	4 416		26 722		12 657	43 795
Commercial	214					214
Industrial	399					399
Government	1 735					1 735
Street Lighting	94					94
TOTAL	6 859		26 722		12 657	46 237

4.11 REMOTE COMMUNITY ANALYSIS

Load Centre:	Paradise River, Labrador
Communities Serviced:	Paradise River
Status:	Unincorporated
Location:	Lat: 53° 27' N
	Long: 55° 48' W

Sources of Information:

Publications and Articles

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

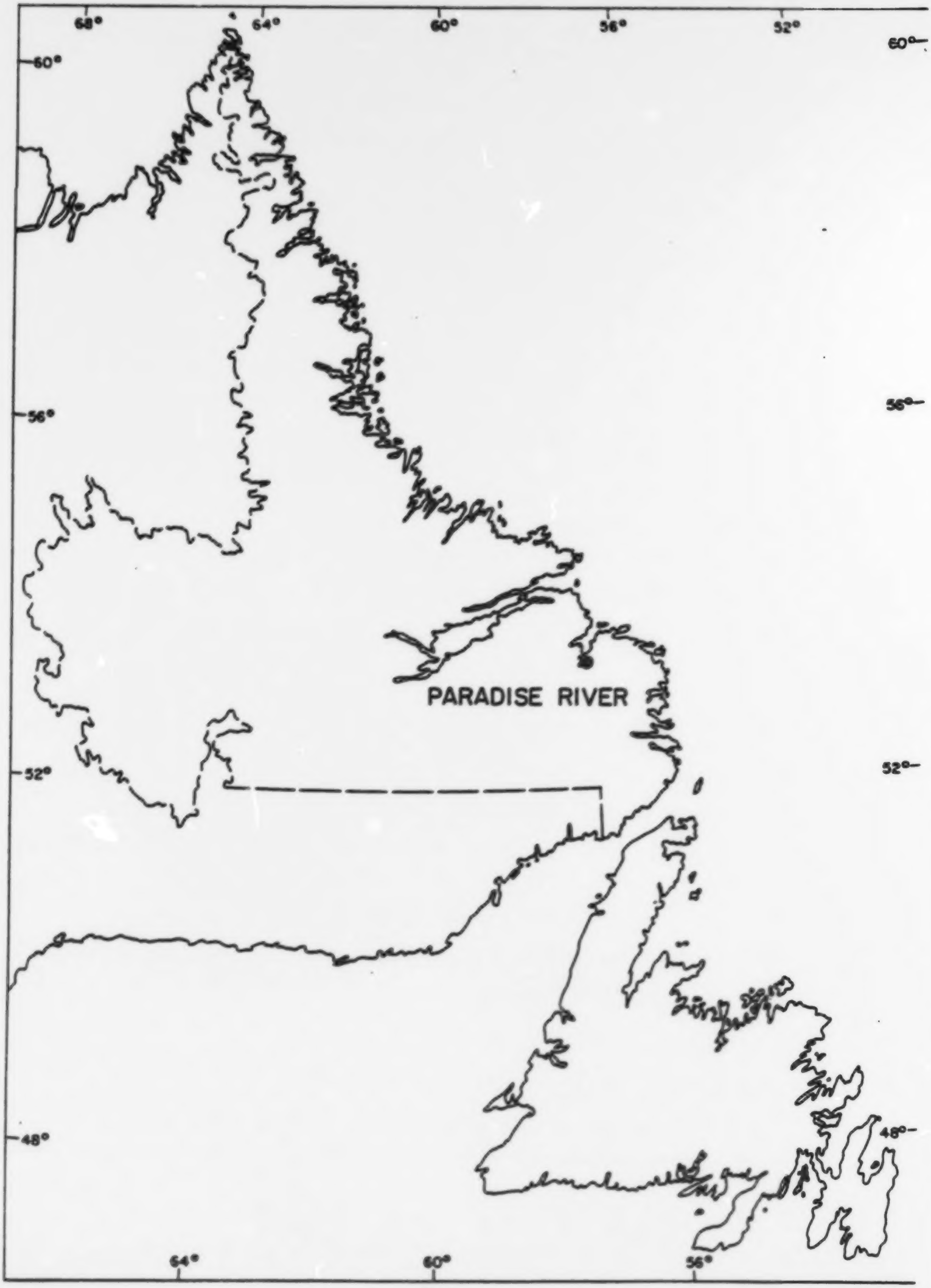
Department of Municipal Affairs and Housing, May and June 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.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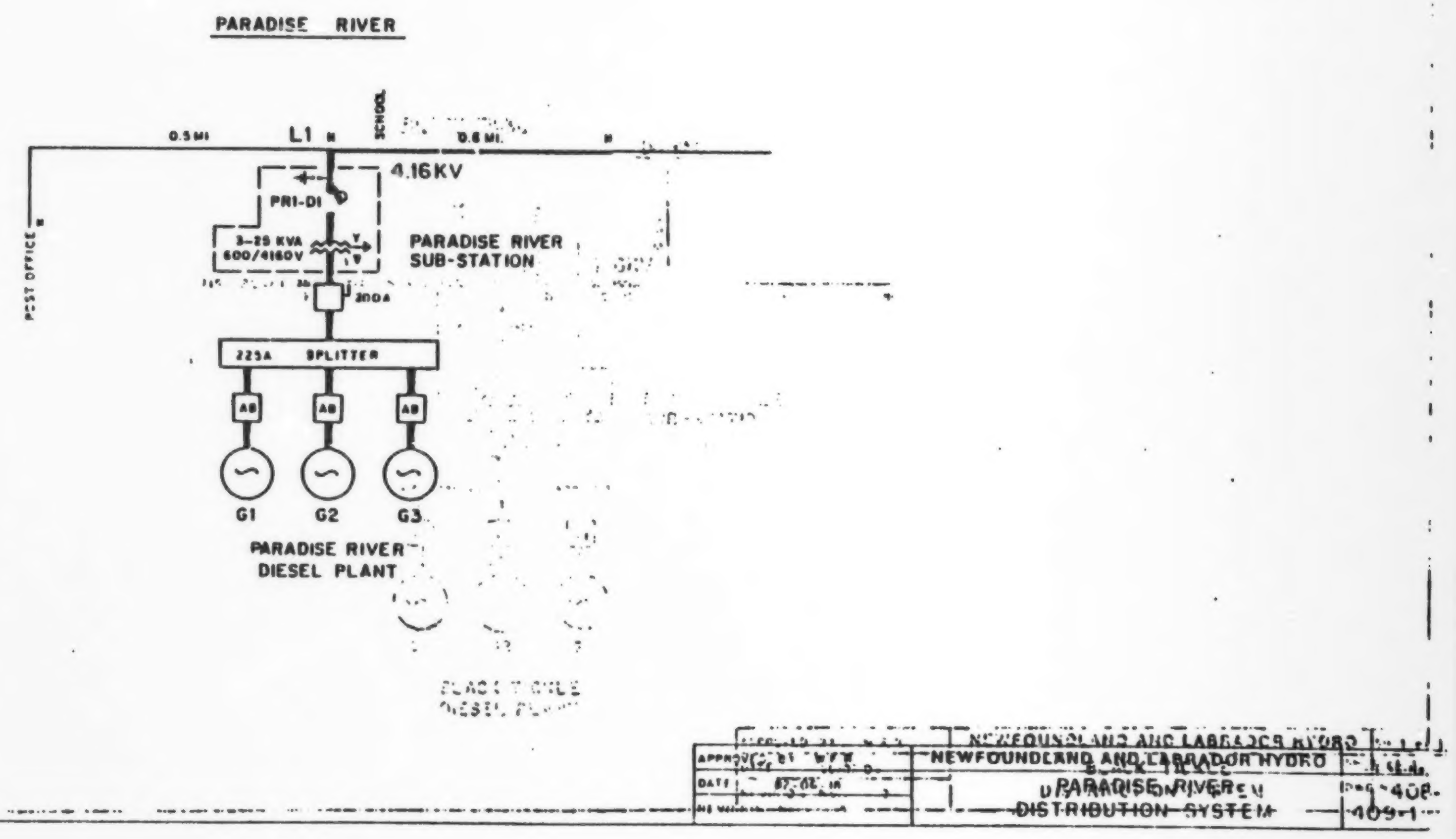

PARADISE RIVER
0.5 MI
L1
SCHOOL
0.6 MI.
POST OFFICE
4.16KV
PRI-DI
3-25 KVA
600/4160V
PARADISE RIVER
SUB-STATION
200A
225A SPLITTER
AB
AB
AB
G1
G2
G3
PARADISE RIVER
DIESEL PLANT
APPROVED BY
DATE
NEWFOUNDLAND AND LABRADOR HYDRO
PARADISE RIVER
DISTRIBUTION SYSTEM
408-
409-1

A. History and Current Status

1. N/A

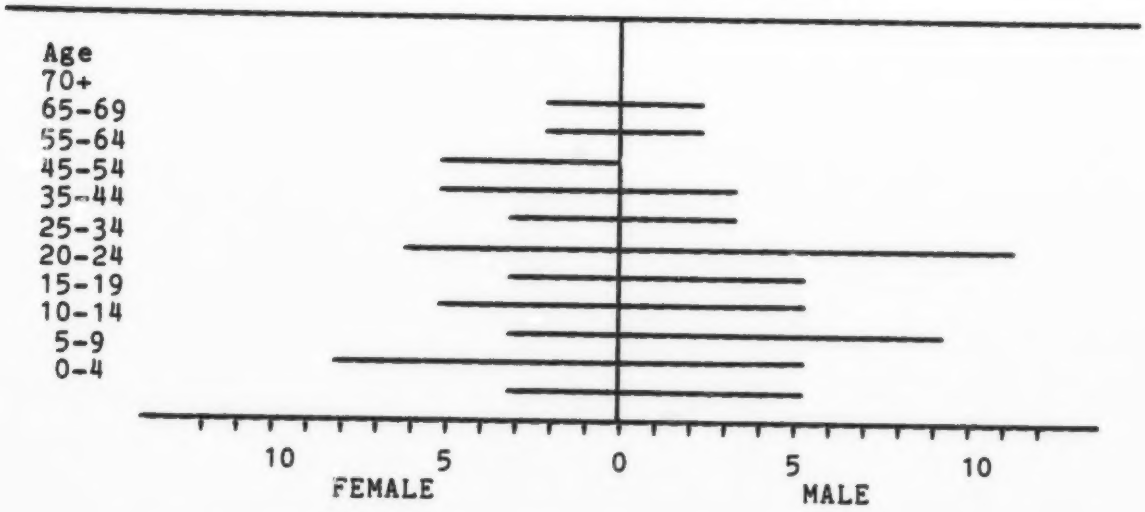
2. Demographics

1981 Population: 92

Projected Future Population Growth:

At 2% per annum: 1986 - 101 1991 - 110

Population Structure by Age and By Gender - 1981



No. of Females - 45 No. of Males - 47

Footnotes

There is a fairly young population: 71% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells X Other ____________

Distribution:

Pipe ____ Truck X Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks X Treatment Plant ____ None ____

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes ____ No X
Other: open dump Yes X No ____

4. **Police Protection**

R.C.M.P.: Yes X No ____

Patrolled from: Cartwright

---

5. **Fire Protection Organized**

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. **Health**

Clinic in Community: Yes X No ____

Size of Facility: 58.5 M^2

Staff: Doctors: ____ Nurses: 1

Other: None

---

2. **Education**

School located in community: Yes X No ____

Grades: Kindergarten to Grade 8

Size: N/A Classrooms: N/A Teachers: 2

3. Residential

(1) Number of occupied private dwellings: 20
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 17
(5) Number of rented homes: 3
(6) Number of single detached homes: 20
(7) Number of single attached homes:
(8) Average number of persons per private household: 4.6
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

Variety Store

Church

D. ECONOMIC ACTIVITIES

1. Fishery

E. COMMUNICATION LINKS

					Comments
Post Office	Yes	X	No		local
Television	Yes	X	No		CBC
Radio	Yes	X	No		CBC
Telephone	Yes		No	X	
High Frequency Radio	Yes	X	No		Operator handled

Operated By: Newfoundland Telephone

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	Scheduled & Charter
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles		X	
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 1 - 60 kw Deutz with Tamper Generator
2 - 40 kw Deutz with Tamper Generators

3. **Diesel Fuel Consumption:**

	1981	1982
Annual Fuel Use (litres)	84 923	93,498
Annual Fuel Cost	$28,847.00	$36,723.00
Cost per Litre	$0.34	$0.39
Cost Increase		15%

4. **Electricity Demand - Historical and Predicted (mwh):**

1980	151	1985	166
1981	152	1986	166
1982	165	1987	166
1983	166	1988	166
1984	166		

5. **Peak Load Demand - Historical and Predicted (kw):**

1980	50	1985	66
1981	60	1986	66
1982	66	1987	66
1983	66	1988	66
1984	66		

ASSESSMENT OF RESOURCES - Paradise River

Small Scale Hydro Potential

There are two possible sites within 8 km. of the nearest transmission line. The more distant site, located on Sandwich Bay Brook, 7.2 km. from the community, has a nominal capacity of 50 kw. through a head of approximately 5 M. The other site is located on an unnamed brook, which for identification purposes has been called Paradise Brook, 3.4 km. from the community. The estimated nominal capacity is 235 kw. through a head of approximately 7 M.

Although the community is located at the mouth of the Paradise River, there is no suitable site on this river within approximately 30 km. of the community due to the flatness of the terrain and the width of the river.

Wood Resources

The published data base on the inventory of fuelwood resources in this area is insufficient to formulate definitive conclusions about this alternative. The Statistics Canada data base indicates that approximately 41% of householders use wood as a primary fuel. The potential to increase the use of wood as a primary or secondary fuel requires further study.

Peat Resources

No published fuel peat inventories are available for this area, and consequently, no definitive conclusions can be made about this alternative.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating - Heat Recovery

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

Small scale hydro development in the Paradise River area is not economically viable. The site studied by Shawmont would yield an Annual Equivalent Cost of $0.59 per kwh. and is clearly not competitive with diesel-generated electricity at $0.25 per kwh.

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Paradise River COMMUNITY: Paradise River

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWO (tonne
Residential	124 481		300 042		9
Commercial					
Industrial					
Government	5 282				
Street Lighting					
TOTAL	129 763		300 042		9

1982 ENERGY PROFILE

LOAD CENTER: Paradise River COMMUNITY: Paradise River

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ
Residential	448		11 306		7 805	19 55
Commercial						
Industrial						
Government	19					1
Street Lighting						
TOTAL	467		11 306		7 805	19 57

4.12 REMOTE COMMUNITY ANALYSIS

Load Centre: Port Hope Simpson, Labrador

Communities Serviced: Port Hope Simpson

Status: Incorporated

Location: Lat: 52° 29' N

Long: 55° 57' W

Sources of Information:

Publications and Articles

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

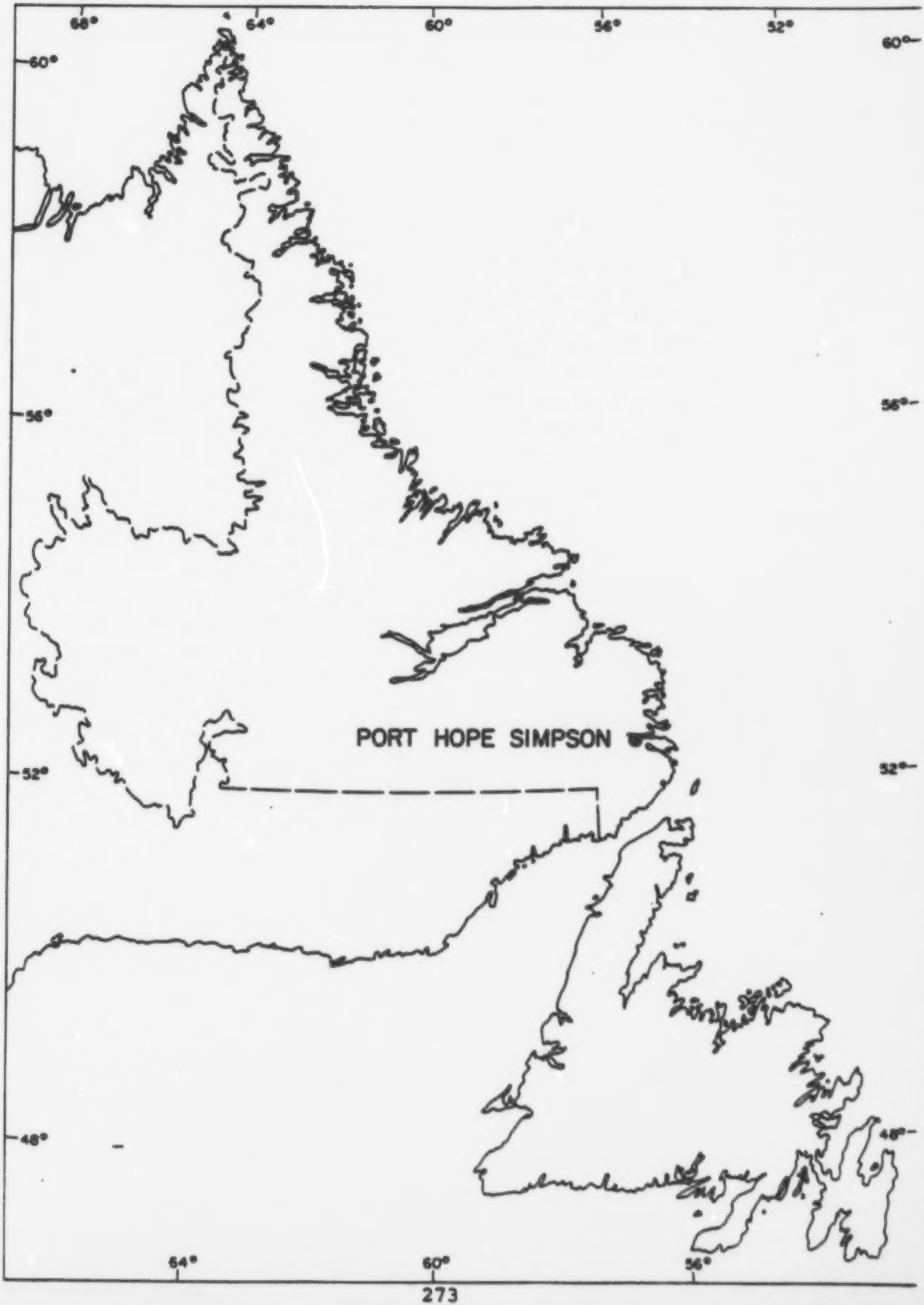
Department of Municipal Affairs and Housing, May and June 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.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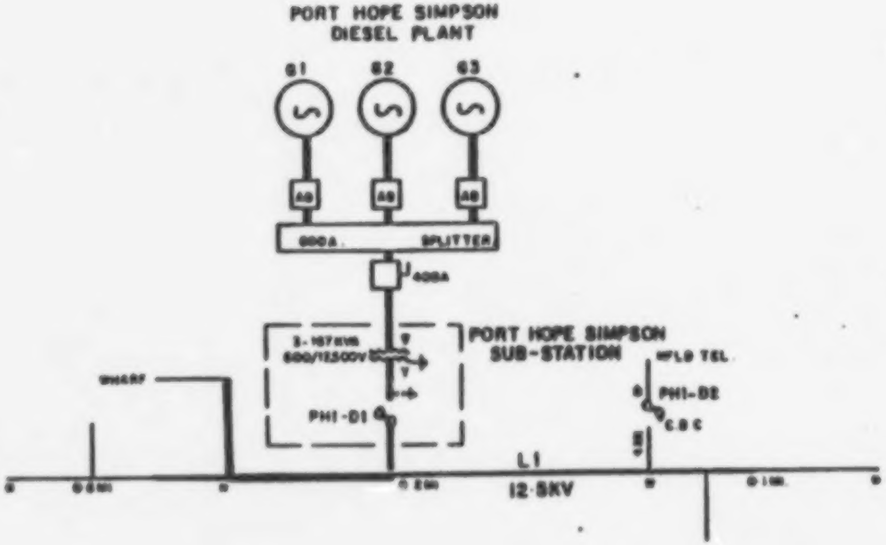
PORT HOPE SIMPSON


PORT HOPE SIMPSON
DIESEL PLANT
G1
G2
G3
AB
AB
AB
600A
SPLITTER
400A
3-167KVA
600/12500V
PORT HOPE SIMPSON
SUB-STATION
PHI-D1
WHARF
NFLD TEL
PHI-D2
C.B.C
L1
12.5KV

APPROVED BY: W.F.R	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 OF 1
DATE: 83-01-07	PORT HOPE SIMPSON DISTRIBUTION SYSTEM	DWG. NO 304-1
REVISION NO.: 3		

A. History and Current Status

1. Port Hope Simpson was named after John Hope Simpson, who established a logging operation at Port Hope Simpson in the early 1930's. When the logging operation started, people began to move to Port Hope Simpson from Williams Harbour, Georges Cove and Seal Island. Bowaters took over the operation and built a network of forest access roads. However, they ceased operation in the late 1960's. Today, the community's economy is based upon the fishery and is supplemented by sawmill operations.

2. Demographics

1981 Population: 581

Historic Population

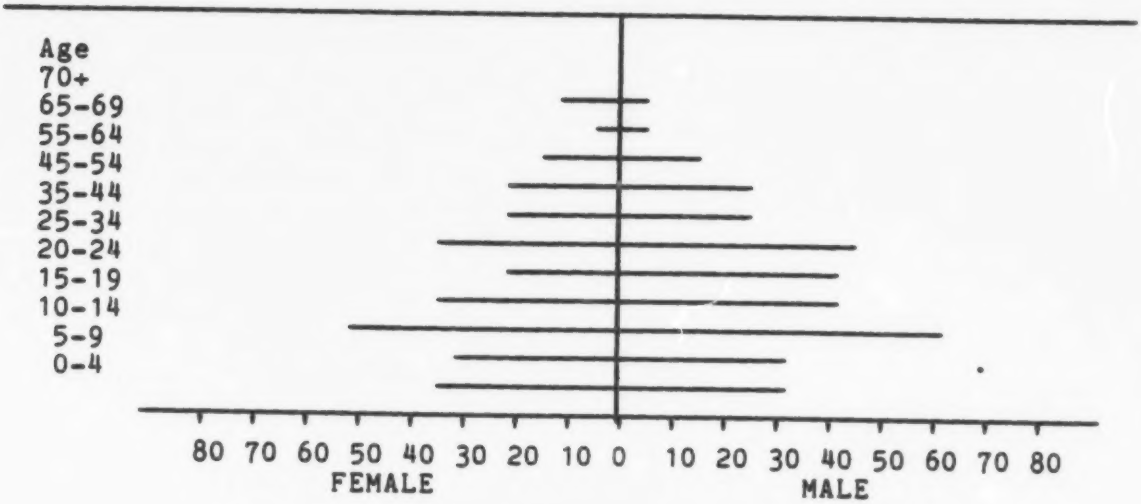
Year	Population	Increase	Growth %	Average Annual Growth %
1976	548			
1981	581	33	6.0	1.2

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

1. At 2% per annum: 1986 - 639 1991 - 697

Population Structure by Age and By Gender - 1981



No. of Females - 268 No. of Males - 313

Footnotes

There is a fairly young population, with 75% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. **Water**

Source:

Lake ____ River _X_ Wells _X_ Other ________

Distribution:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_ Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None _X_

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon ____ Septic Tanks X Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes ____ No X
Other: open dump Yes X No ____

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Mary's Harbour

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No ____

Size of Facility: 390.2 M^2

Staff: Doctors: ____ Nurses: 2

Other: 2 Nursing Assistants

---

2. Education

School located in community: Yes 2 No ____

Grades: Kindergarten to Grade 6; Kindergarten to Grade 11

Size: N/A Classrooms: N/A Teachers: 7/6

---

3. Residential

(1) Number of occupied private dwellings: 110
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: 75, very good; 15 need minor repair; 15 need major repair
(4) Number of owned homes: 100
(5) Number of rented homes: 5
(6) Number of single detached homes: 105
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 5.3
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 15
(11) Dwellings heated with stove or space heater: 75
(12) Dwellings heated by electric heat: 0
(13) Other: wood 15

4. Community/Institutional/Commercial/Industrial Buildings

Church
Church
Business Establishment
Business Establishment
Community Hall
Amusement Center

Church
Church
Business Establishment
Business Establishment
Amusement Center
Gymnasium

D. ECONOMIC ACTIVITIES

1. Fishery
2. Sawmilling

E. COMMUNICATION LINKS

					Comments
Post Office	Yes	X	No		local
Television	Yes	X	No		CBC
Radio	Yes	X	No		CBC
Telephone	Yes	X	No		operator handled
High Frequency Radio	Yes		No	X	

Operated By: ________________

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	Scheduled & Charter
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 1 - 136 kw Cat. with B.B.C. Generator
2 - 250 kw Cat. with Tamper Generators

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	312 178	296,817
Annual Fuel Cost	$107,112.00	$124,064.00
Cost per Litre	$0.34	$0.42
Cost Increase		24%

4. Electricity Demand - Historical and Predicted (mwh):

1980	659	1985	1001
1981	733	1986	1070
1982	812	1987	1142
1983	880	1988	1220
1984	938		

5. Peak Load Demand - Historical and Predicted (kw):

1980	240	1985	323
1981	252	1986	347
1982	258	1987	372
1983	282	1988	399
1984	302		

H. ASSESSMENT OF RESOURCES - Port Hope Simpson

Small Scale Hydro Potential

There are four potential sites on three different rivers all located within 9 km. of the nearest transmission line. The furthest site, 8.6 km. from the community, is located on Bobby's Brook. This site has a nominal capacity of 355 kw. through a head of approximately 4 M. The smallest site, located on Notley's Brook, 8 km. from the community, has a nominal capacity of 240 kw. through a head of approximately 14 M.

The remaining two sites are located on an unnamed river, which for identification purposes has been named Port Hope Simpson River. The more distant of the two sites is located 5 km. upstream and 7.2 km. from the community. It has a nominal capacity of 280 kw. through a head of approximately 7 M. The other site is located at Alexis River and has a nominal capacity of 465 kw. through a head of approximately 10 M.

Wood Resources

The published data base on the inventory of fuelwood resources in this area is insufficient to formulate definitive conclusions about this alternative. The Statistics Canada data base indicates that approximately 91% of householders use wood as a primary fuel. The potential to increase the use of wood as a primary or secondary fuel appears limited but nevertheless requires further study.

Peat Resources

No published fuel peat inventories are available for this area, and consequently, no definitive conclusions can be made about this alternative.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

Small scale hydro development does not appear to be a viable alternative to diesel generated electricity for Port Hope Simpson. The most promising site in the area yielded an Annual Equivalent Cost of $0.46 per kwh. and is clearly not competitive with diesel-generated electricity at $0.25 per kwh.

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Port Hope Simpson COMMUNITY: Port Hope Simpson

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWO (tonne
Residential	607 750		54 553		2 47
Commercial	25 122				
Industrial					
Government	44 660				
Street Lighting	17 820				
TOTAL	695 352		54 553		2 47

1982 ENERGY PROFILE

LOAD CENTER: Port Hope Simpson COMMUNITY: Port Hope Simpson

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	2 188		2 056		20 041	24 285
Commercial	90					90
Industal						
Government	161					161
Street Lighting	64					64
TOTAL	2 374		2 056		20 041	24 600

4.13 REMOTE COMMUNITY ANALYSIS

Load Center: Postville, Labrador

Communities Serviced: Postville, Labrador

Status: Incorporated Community

Location: 54° 54' N
59° 47' W

Sources of Information:

Publications and Articles

DPA Consulting Ltd., "Community of Postville, Labrador, Municipal Plan," June 1980.

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 198

Royal Canadian Mounted Police, June 1983.

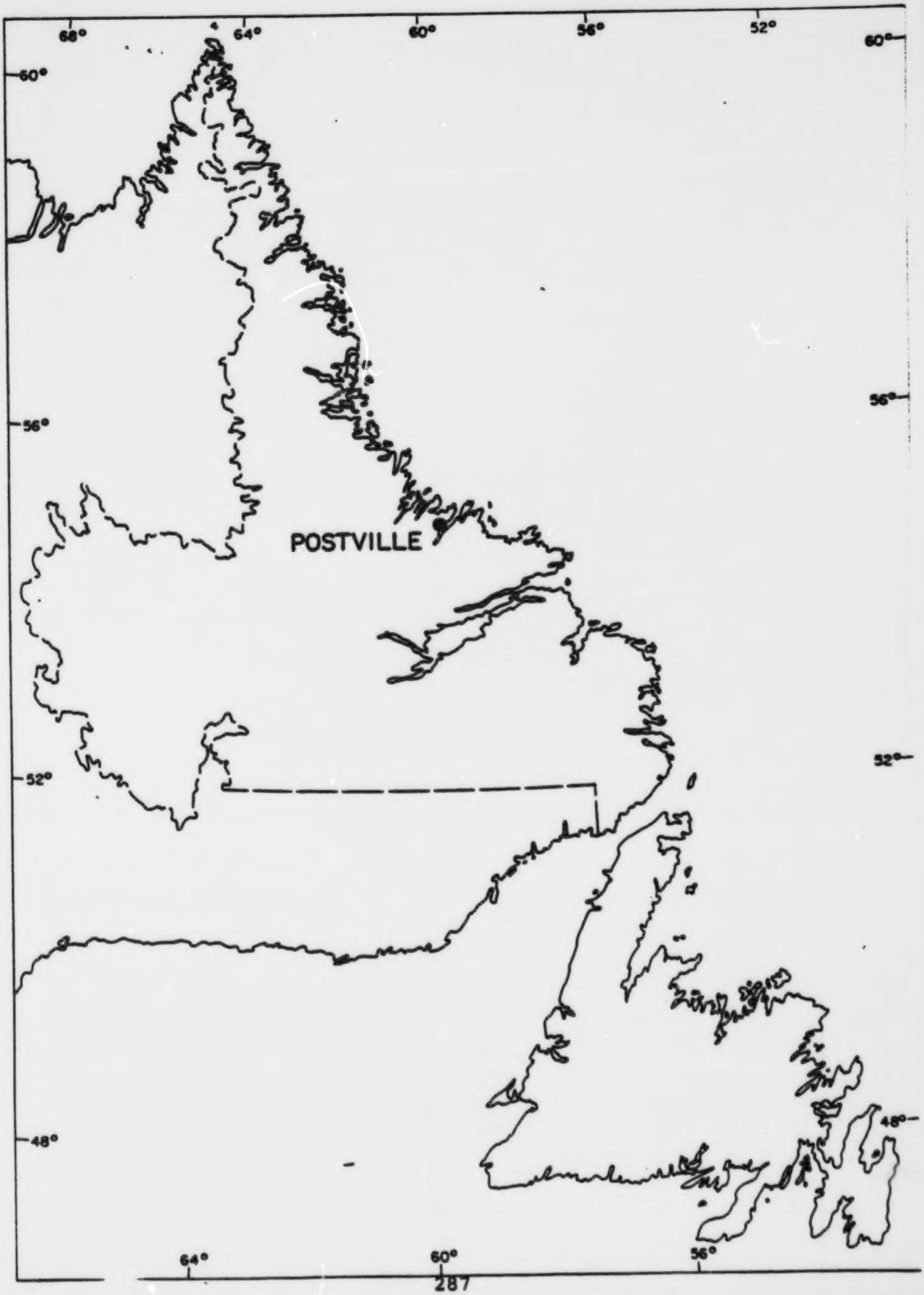
Department of Municipal Affairs and Housing, May 1983.

Department of Health, June 1983.

Woodward's Oil Limited, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariant, June 1983.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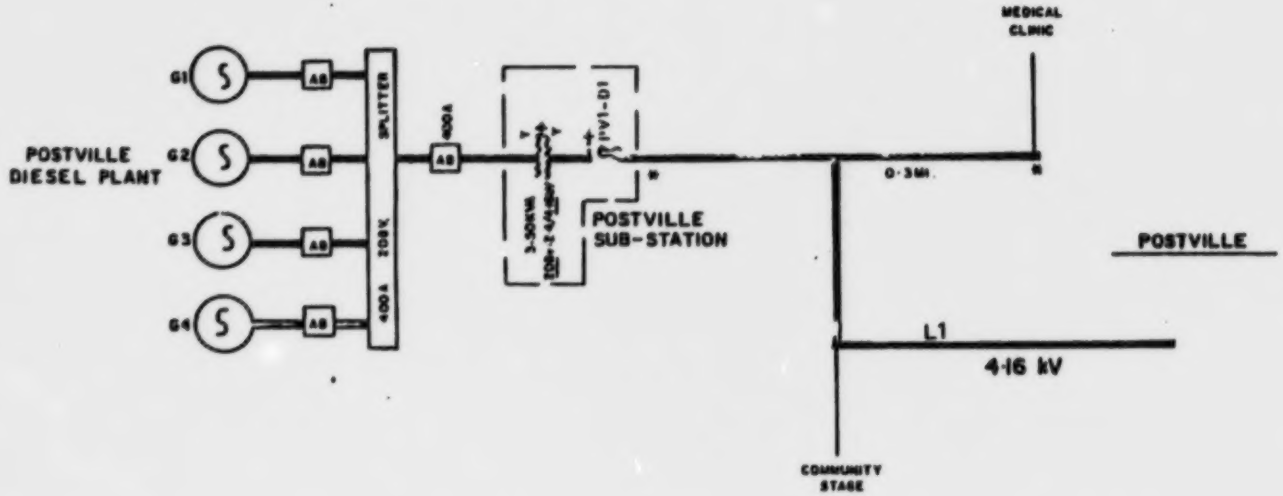
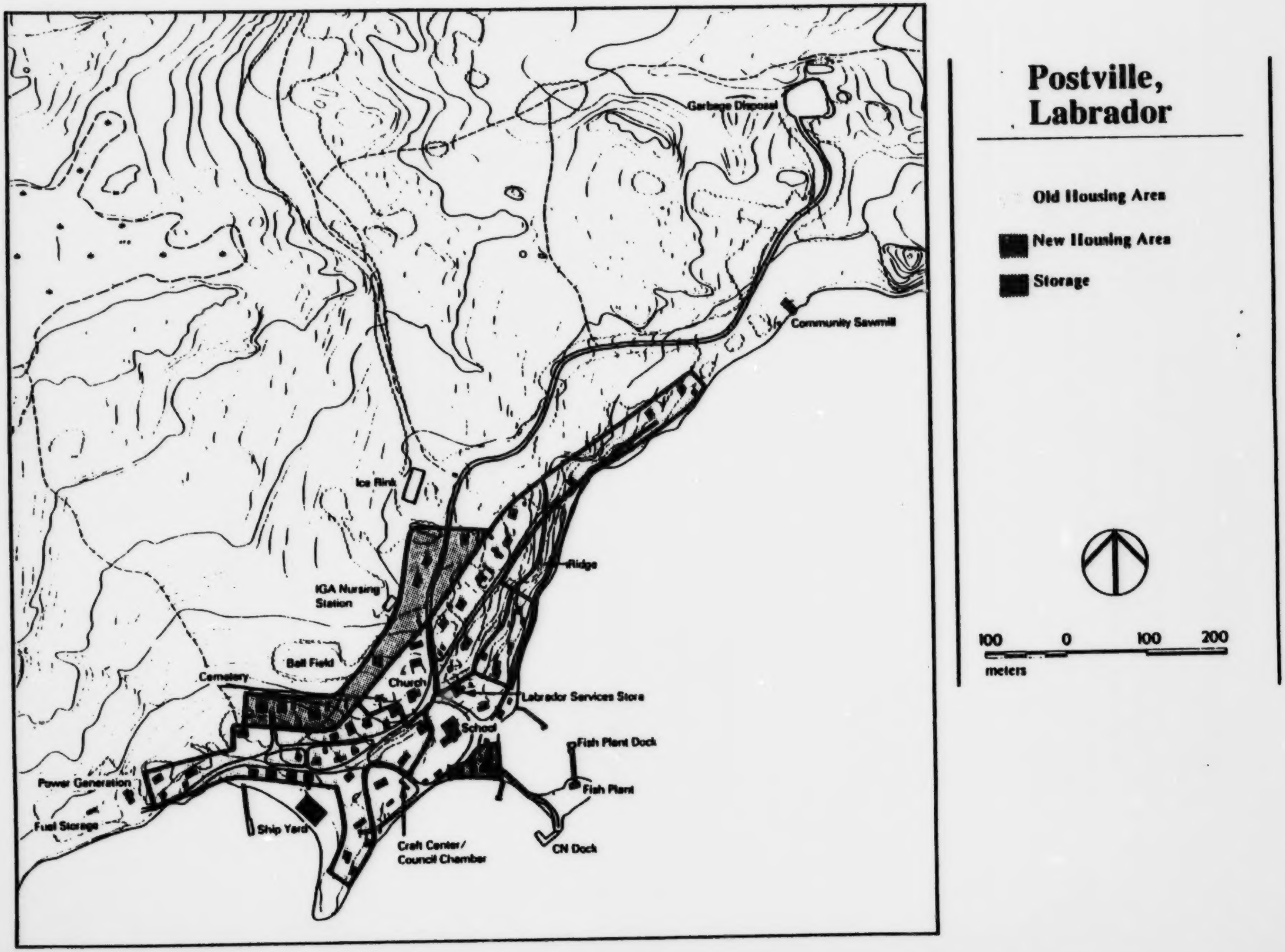

POSTVILLE
DIESEL PLANT
G1
G2
G3
G4
AB
SPLITTER
208V
400A
400A
3-50KVA
208-2.4/4.16kV
PV1-D1
POSTVILLE
SUB-STATION
0·3MI.
MEDICAL
CLINIC
COMMUNITY
STAGE
L1
4·16 kV
POSTVILLE

APPROVED BY: W.F.B	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 of 1
DATE: 83-01-11	POSTVILLE DISTRIBUTION SYSTEM	DWG. No. 407-1
REVISION No.: 4		

Postville, Labrador


Old Housing Area
New Housing Area
Storage
100
0
100
200
meters
Garbage Disposal
Community Sawmill
Ice Rink
Ridge
IGA Nursing Station
Ball Field
Cemetery
Church
Labrador Services Store
School
Fish Plant Dock
Fish Plant
CN Dock
Craft Center/ Council Chamber
Ship Yard
Power Generation
Fuel Storage

A. History and Current Status

1. Postville is a relatively new community. It was established in 1941 as a resettlement program of the Pentecostal Church to provide residents scattered around Kaipokok Bay with a permanent settlement. Around 1946 Pastor Gillette, the community's founder, managed to start a stable business which employed most of the community's residents. The provincial government took over the store operation in 1952 and has continued its operation since that time. At present, fishing during the summer, along with sealing, hunting, and trapping in other seasons, are the major economic activities. Hydrocarbon exploration off of Postville, mineral activity in the immediate hinterland, potential re-opening of a shipbuilding operation, and increased activity in traditional occupations (especially fishing) should provide the community with a favourable economic outlook during the next ten years.

---

2. Demographics

1981 Population: 223

Historic Population

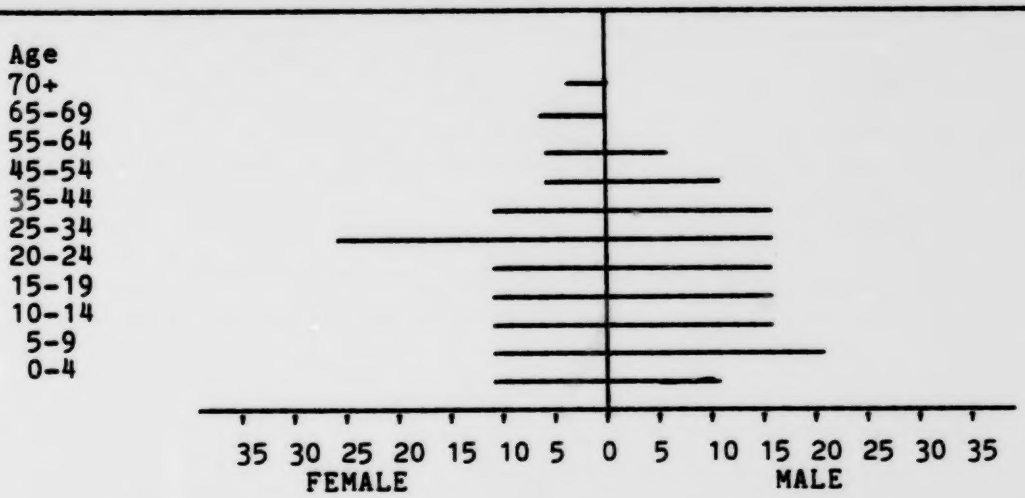
Year	Population	Increase	Growth %	Average Annual Growth %
1971	121			
1976	164	43	36	7.0
1981	223	59	36	7.0

Source Note: Postville Municipal Plan

Projected Future Population Growth:

1988 - 274 2000 - 380

Population Structure by Age and By Gender - 1981*



No. of Females - 103 No. of Males - 120

Footnotes:

* 84% of population are under the age of 55.
57% of population are under the age of 35.

Source Note: 1981 Census of Canada

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells X Other ____

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. **Sewage**

Collection System:

Pipe _____ Truck _____ Individual Systems 50% None 50%

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon ___ Septic Tanks 50% Treatment Plant ___ None 50%

---

3. **Solid Waste Disposal**

Garbage Collection Organized:	Yes	X	No	
Landfill Site Utilized:	Yes	X	No	
Other:	Yes		No	X

---

4. **Police Protection**

R.C.M.P.: Yes X No _____

Patrolled from: Hopedale

---

5. **Fire Protection Organized**

Organized: Yes _____ No X

Equipment: N/A

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No ____

Size of Facility: 295.5 M^2

Staff: Doctors: ____ Nurses: 1

Other: visiting medical specialists and dentist

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 11

Size: N/A Classrooms: N/A Teachers: 5

---

3. Residential

(1) Number of occupied private dwellings: 50
(2) Number of houses with sewer and water: 50% have septic tanks; 50% have piped water system in summer; 0% in winter
(3) Housing Condition: 80% good
(4) Number of owned homes: 35
(5) Number of rented homes: 15
(6) Number of single detached homes: 50
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 4.4
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 20
(11) Dwellings heated with stove or space heater: 25
(12) Dwellings heated by electric heat: 0
(13) Other: ____ 0

4. Community/Institutional/Commercial/Industrial Buildings

1 General Store
1 Craft Centre
1 Sawmill (closed)
1 Fishplant (closed)
1 Skidoo and Variety Store
1 Shipyard (closed)
1 Church
1 IGA Nursing Station

D. ECONOMIC ACTIVITIES

1. Fishing
2. Hunting
3. Trapping
4. Crafts
5. Shipbuilding

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	AOP 1NO
Television	Yes X	No	pirate taped CBC (1 week delay)
Radio	Yes X	No	CBC from Happy Valley
Telephone	Yes X	No	operator handled
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	scheduled & charter
Marine	CN Coastal Boats	scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 3 - 75 kw Cat. with Tamper Generator
1 - 50 kw Cat. with Tamper Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	288 604	314,890
Annual Fuel Cost	$99.212.00	$122,533.00
Cost per Litre	$0.34	$0.39
Cost Increase		15%

4. Electricity Demand Historical and Predicted (mwh):

1980	485	1985	873
1981	557	1986	956
1982	623	1987	1047
1983	706	1988	1149
1984	798		

5. Peak Load Demand - Historical and Predicted (kw):

1980	156	1985	228
1981	144	1986	251
1982	160	1987	276
1983	182	1988	304
1984	207		

ASSESSMENT OF RESOURCES - Postville

Small Scale Hydro Potential

There are two possible sites within 9 km. of the nearest transmission line, both of which are located on English River. The closer and larger of the two at Karpokok Bay, 7 km. from the community, has an estimated nominal capacity of 780 kw. through a head of 4 M. The more distant site has an estimated nominal capacity of 110 kw. through a head of approximately 15 M. This site is located approximately 8.5 km. from the community.

Wood Resources

The published data base on the inventory of fuelwood resources in this area is insufficient to formulate definitive conclusions about this alternative. The Statistics Canada data base indicates that approximately 71% of householders use wood as a primary fuel. The potential to increase the use of wood as a primary or secondary fuel requires further study.

Peat Resources

No published fuel peat inventories are available for this area, and consequently, no definitive conclusions can be made about this alternative.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

Small scale hydro development is not an economically viable alternative to diesel generated electricity for Postville. The most promising site identified during the Shawmont study has an Annual Equivalent Cost of $0.53 per kwh. and is not competitive with diesel-generated electricity at $0.25 per kwh.

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Postville COMMUNITY: Postville

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWO (tonne
Residential	339 504		81 830		9
Commercial					
Industrial					
Government	166 709				
Street Lighting	11 880				
TOTAL	518 093		81 830		9

1982 ENERGY PROFILE

LOAD CENTER: Postville COMMUNITY: Postville

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 222		3 083		7 384	11 689
Commercial						
Industrial						
Government	600					600
Street Lighting	43					43
TOTAL	1 865		3 083		7 384	12 332

4.14 REMOTE COMMUNITY ANALYSIS

Load Center: Rigolet, Labrador

Communities Serviced: Rigolet, Labrador

Status: Incorporated

Location: Lat: 54° 10' N

Long: 58° 25' W

Sources of Information:

Publications and Articles

DPA Consulting Ltd., "Community of Rigolet, Labrador, Muncipal Plan," June 1980.

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1981.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 198

Royal Canadian Mounted Police, June 1983.

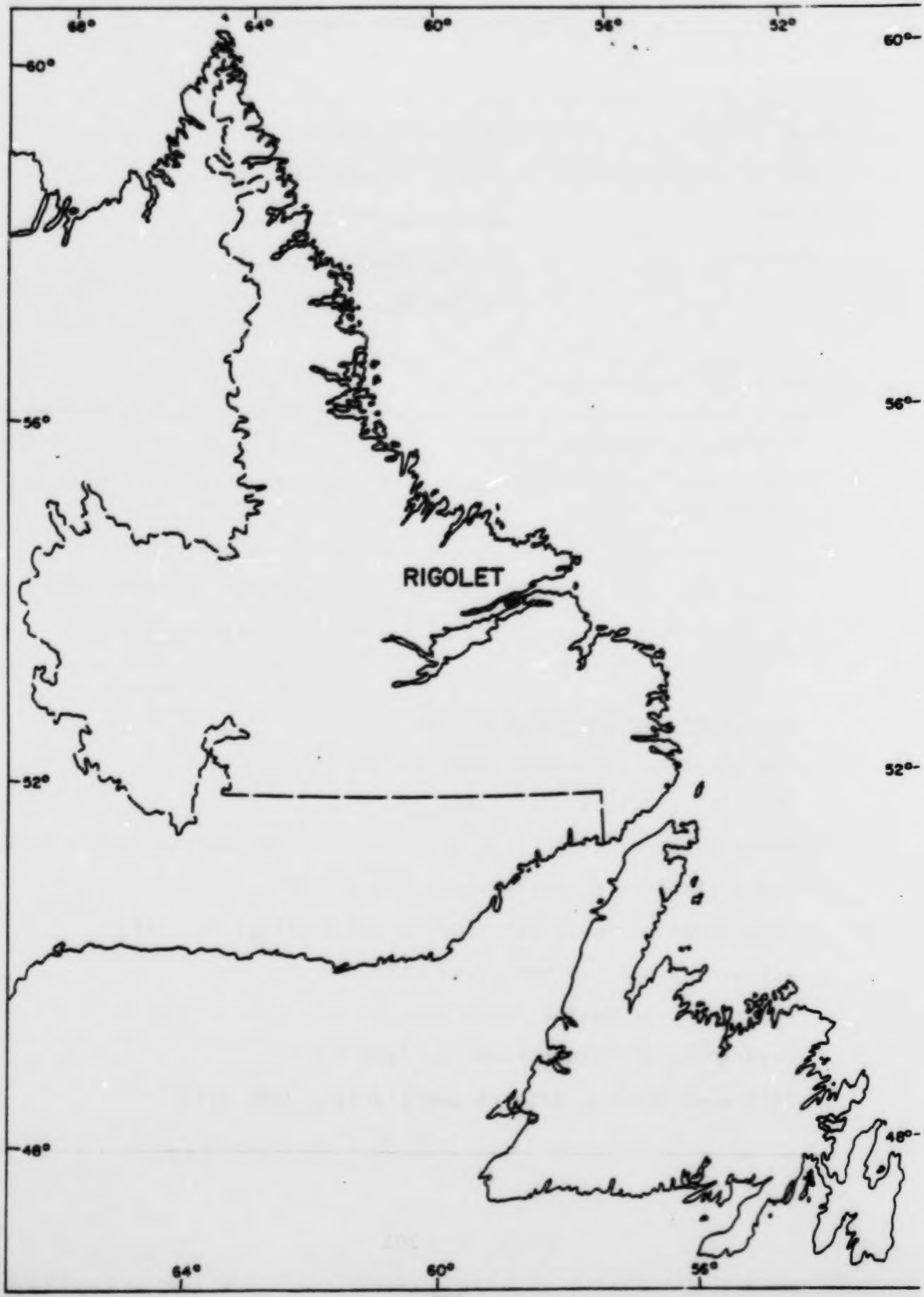
Department of Municipal Affairs and Housing, May 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.



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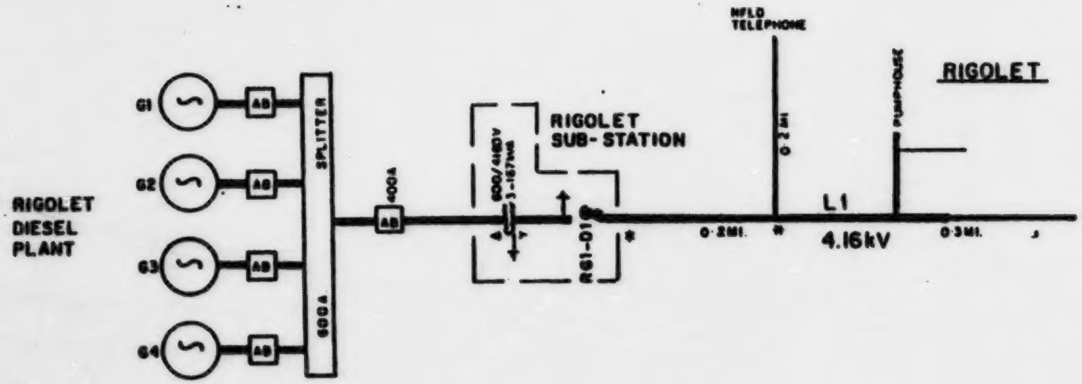
RIGOLET
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SPLITTER
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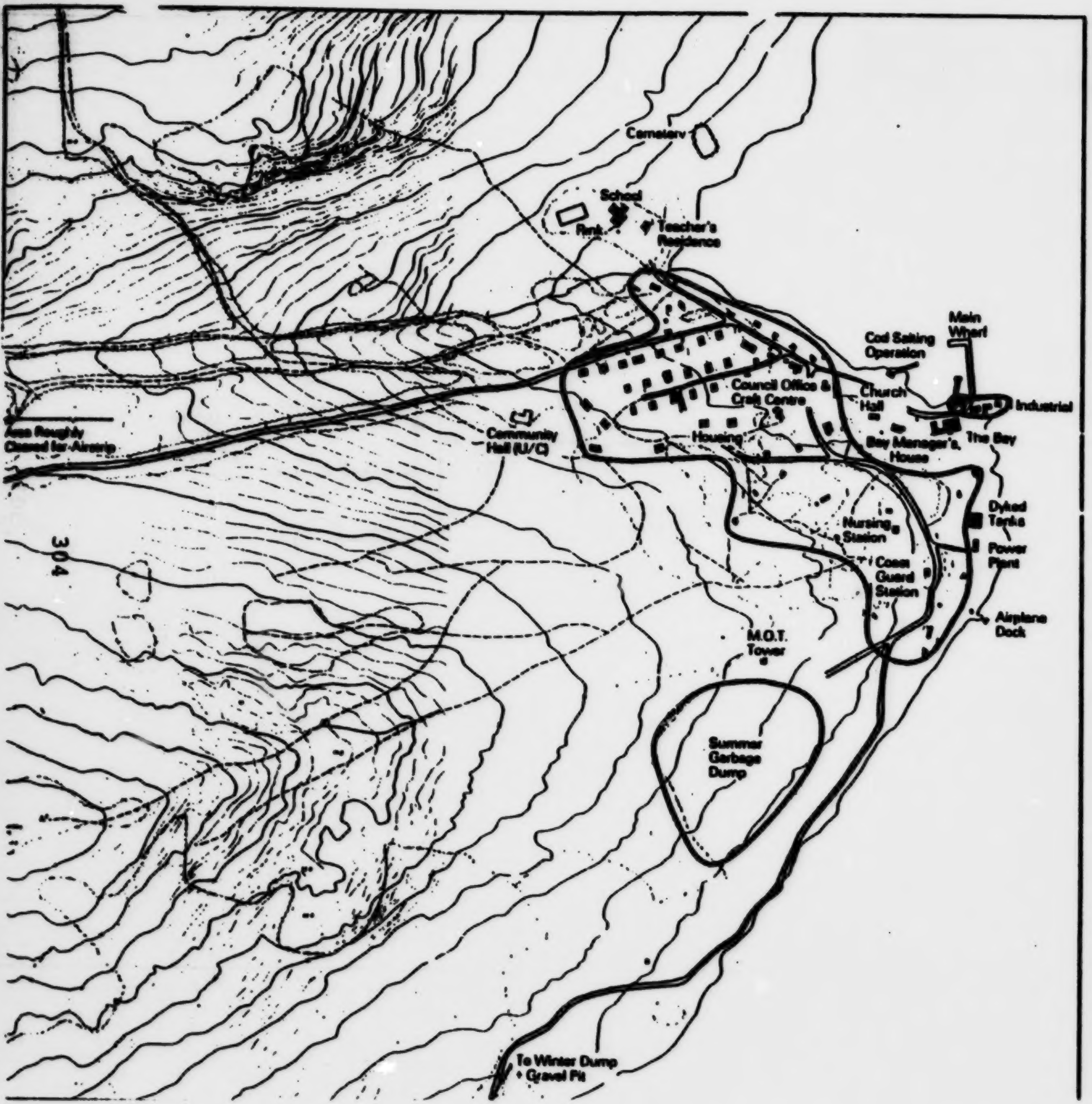
RIGOLET
SUB-STATION
600/4160V
3-167kVA
RG1-D1
*
0·2MI.
NFLD
TELEPHONE
0·2MI
L1
4.16kV
PUMPHOUSE
0·3MI.
RIGOLET

APPROVED BY : W.F.R	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 of 1
DATE : 83-06-03	RIGOLET DISTRIBUTION SYSTEM	DWG. No. 410-1
REVISION No.: 4		


Cemetery
School
Rink
Teacher's Residence
Cod Salting Operation
Main Wharf
Church Hall
Industrial
Council Office & Craft Centre
Area Roughly Cleared for Airstrip
Community Hall (U/C)
Housing
Bay Manager's House
The Bay
Dyked Tanks
Nursing Station
Power Plant
Coast Guard Station
Airplane Dock
M.O.T. Tower
Summer Garbage Dump
To Winter Dump + Gravel Pit

Rigolet, Labrador

Existing Land Use

100 0 100 200
meters

Prepared for
The Community of
Rigolet, Labrador,
and the Department of
Municipal Affairs and
Housing.

Prepared by
DPA Consulting Limited
in association with
Project Management and

A. History and Current Status

1. Rigolet was established in 1743 by Louis Fornell, and Mr. Marcoux established the first trading post in 1787. The post was purchased by the Hudson's Bay Company in 1837. The first Court of Justice held in Labrador was conducted at Rigolet in 1826.

During World War II, a Canadian Army Base was established at Rigolet and staffed with 600 infantry and artillery personnel. The base was closed at the end of the war.

From 1945 to 1960, the Inuit and settler population remained scattered around Rigolet. The Hudson's Bay store was important to the trading of goods, but residents had to rely on North West River for medical services and education.

At present, the economy of Rigolet is dominated by the fishing industry and other traditional activities such as sealing, hunting and trapping.

2. Demographics

1981 Population: 271

Historic Population

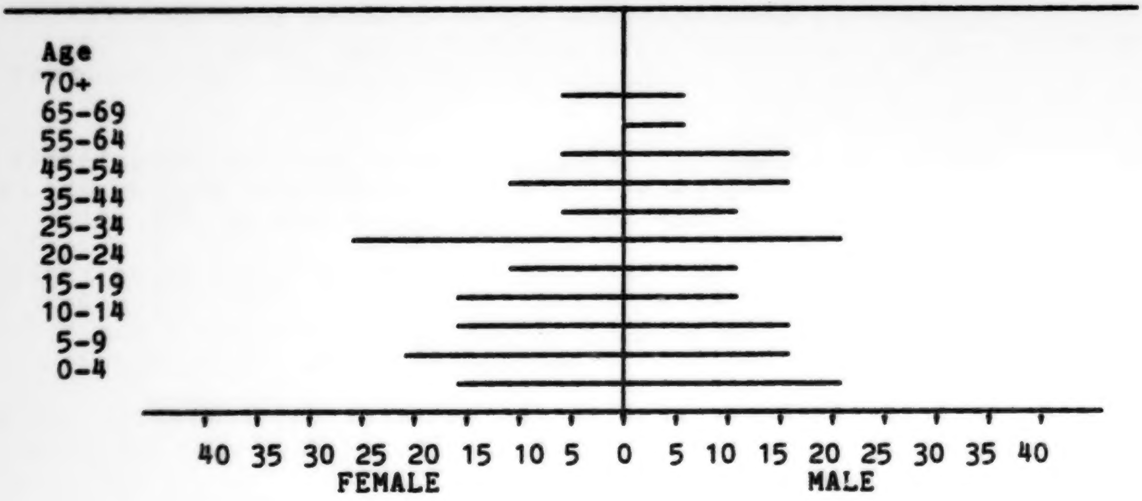
Year	Population	Increase	Growth %	Average Annual Growth %
1971	182			
1976	238	56	30.8	6.2
1981	271	33	13.9	2.8

Source note: 1981 Census of Canada.
Rigolet Municipal Plan, June 1980.

Projected Future Population Growth:

1986 - 350 2000 - 450

Population Structure by Age and By Gender - 1981



No. of Females - 136 No. of Males - 135

Footnotes

Fifty-six percent of the population is under the age of 25.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ___ Wells ___ Other ___

Distribution:

Pipe X Truck ___ Individual Systems ___ None ___

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ___ Filtration ___ Chlorination X
Fluoridation ___ None ___

2. Sewage

Collection System:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes X No ____
Other: Yes ____ No X

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Cartwright

---

5. Fire Protection Organized

Organized: Yes X No ____

Equipment: Sea water gasoline-driven pump

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No ____

Size of Facility: 295.5 M^2

Staff: Doctors: ____ Nurses: 2

Other: visiting doctors

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 9

Size: N/A Classrooms: 5 Teachers: 6

---

3. Residential

(1) Number of occupied private dwellings: 65
(2) Number of houses with sewer and water: 100% have water and sewer
(3) Housing Condition: 55 very good; 5 need minor repair
(4) Number of owned homes: 55
(5) Number of rented homes: 10
(6) Number of single detached homes: 60
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 4.3
(9) Dwellings heated by steam or hot water: 5
(10) Dwellings heated by hot air: 10
(11) Dwellings heated with stove or space heater: 50
(12) Dwellings heated by electric heat: 0
(13) Other: wood 5

4. Community/Institutional/Commercial/Industrial Buildings

Ice House

"The Bay"

Church Hall

Coast Guard Station

Teacher's Residence

Confectionary Store

Craft Centre

"The Bay" Manager's House

Power Plant

Community Hall

Confectionary Store

D. ECONOMIC ACTIVITIES

1. Fishing
2. Hunting
3. Trapping

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	pirate taped CBC
Radio	Yes X	No	sporadic reception
Telephone	Yes X	No	operator handled
High Frequency Radio	Yes	No X	

Operated By: ______

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	scheduled & charter
Marine	CN Coastal Boats	scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
1 - 60 kw Cat. with Tamper Generator
1 - 134 kw Cat. with Cat. Generator
1 - 250 kw Cat. with Cat. Generator
1 - 250 kw Cat. with C.G.E. Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	240 318	298,345
Annual Fuel Cost	$80,856.00	$131,806.00
Cost per Litre	$0.34	$0.44
Cost Increase		29%

4. Electricity Demand - Historical and Predicted (mwh):

1980	602	1985	806
1981	613	1986	824
1982	753	1987	844
1983	770	1988	864
1984	787		

5. Peak Load Demand - Historical and Predicted (kw):

1980	198	1985	215
1981	196	1986	221
1982	200	1987	226
1983	205	1988	232
1984	210		

H. ASSESSMENT OF RESOURCES - Rigolet

Small Scale Hydro Potential

There is one possible site located on an unnamed river (fictitiously called Rigolet Brook), 4.5 km. from the nearest transmission line. The nominal capacity of the site is 225 kw. through a head of 27 M.

Wood Resources

The published data base on the inventory of fuelwood resources in this area is insufficient to formulate definitive conclusions about this alternative. The Statistics Canada data base indicates that approximately 77% of householders use wood as a primary fuel. The potential to increase the use of wood as a primary or secondary fuel appears limited but nevertheless requires further study.

Peat Resources

No published fuel peat inventories are available for this area, and consequently, no definitive conclusions can be made about this alternative.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

With an Annual Equivalent Cost of energy of approximately $0.49 per kwh., small scale hydro development at Rigolet is clearly not economically viable.

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Rigolet COMMUNITY: Rigolet

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWO (tonne
Residential	437 411		81 830		1 3
Commercial	71 754				
Industrial	6 324				
Government	112 231				
Street Lighting	10 692				
TOTAL	638 412		81 830		1 3

1982 ENERGY PROFILE

LOAD CENTER: Rigolet COMMUNITY: Rigolet

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 575		3 083		10 546	15 204
Commercial	258					258
Industrial	23					23
Government	404					404
Street Lighting	38					38
TOTAL	2 298		3 083		10 546	15 927

4.15 REMOTE COMMUNITY ANALYSIS

Load Centre: St. Lewis, Labrador

Communities Serviced: St. Lewis

Status: Unincorporated

Location: Lat: 52° 22' N
Long: 55° 41' W

Sources of Information:

Publications and Articles

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

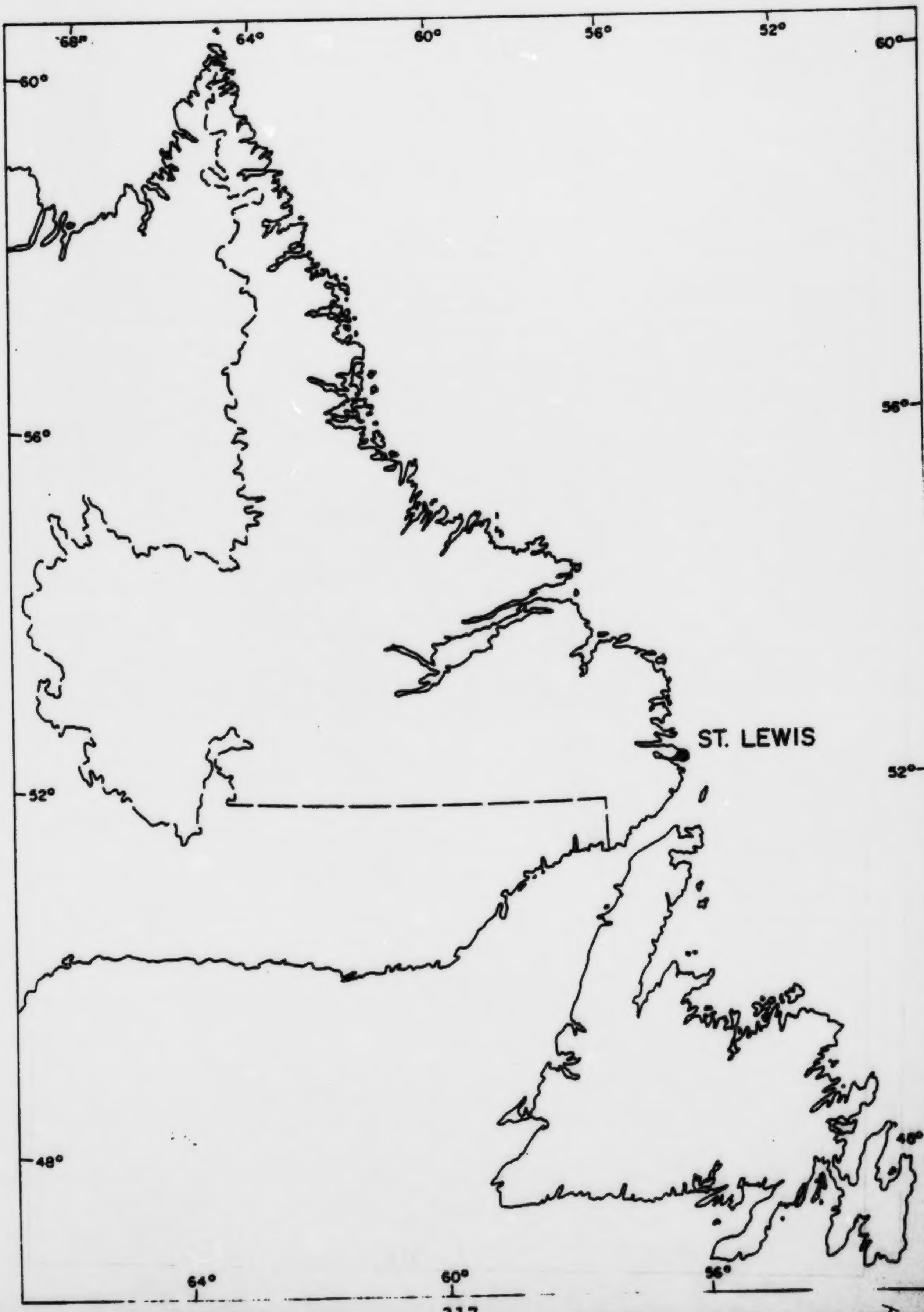
Department of Municipal Affairs and Housing, May and June 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.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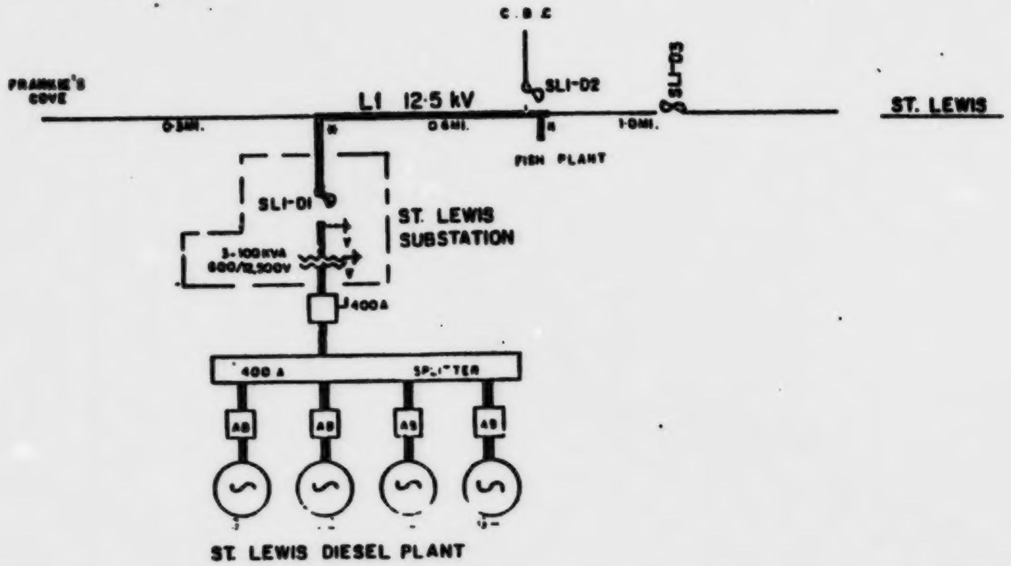
FRANKIE'S COVE
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L1 12.5 kV
0.6MI.
C.B.C
SLI-02
FISH PLANT
1.0MI.
SLI-03
ST. LEWIS
SLI-01
ST. LEWIS SUBSTATION
3-100KVA 600/12,500V
400A
400 A
SPLITTER
AB
AB
AB
AB
ST. LEWIS DIESEL PLANT

APPROVED BY: W.F.R
DATE: 83-01-07
REVISION No.: 0

NEWFOUNDLAND AND LABRADOR HYDRO

ST. LEWIS
DISTRIBUTION SYSTEM

SH 1 OF
DWG.No.
303-

A. **History and Current Status**

1. N/A

2. **Demographics**

1981 Population: 280

Historic Population

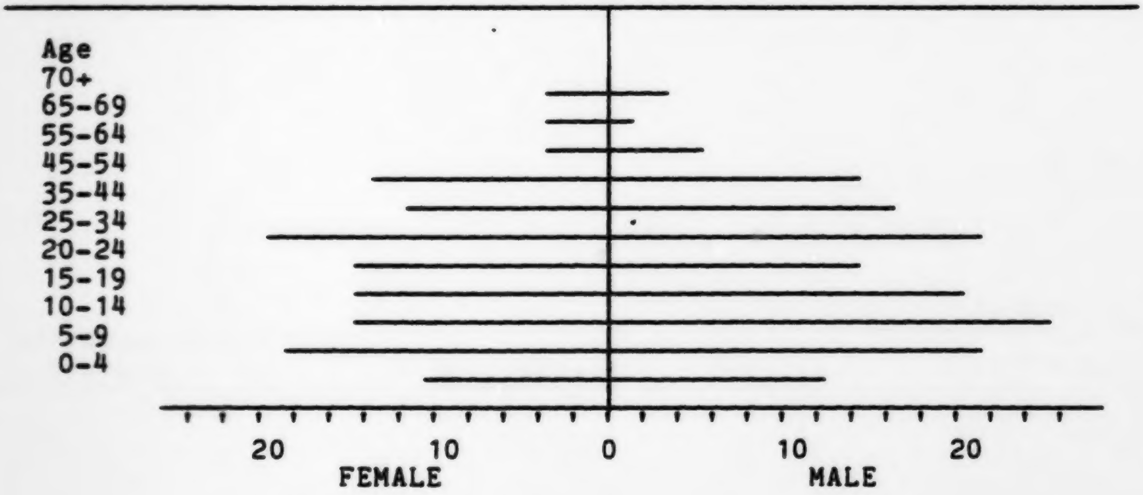
Year	Population	Increase	Growth %	Average Annual Growth %
1966	191			
1971	214	23	12.0	2.3
1976	268	54	25.2	4.6
1981	280	12	4.5	0.9

Source Note: 1981 Census of Canada

Projected Future Population Growth:

1986 - 294 1991 - 309

Population Structure by Age and By Gender - 1981



No. of Females - 125 No. of Males - 155

Footnotes

There is a fairly young population: 75% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ____ Wells X Other ____________

Distribution:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon ____ Septic Tanks __X__ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes ____ No __X__
Landfill Site Utilized: Yes ____ No __X__
Other: Yes ____ No __X__

---

4. Police Protection

R.C.M.P.: Yes __X__ No ____

Patrolled from: Mary's Harbour

---

5. Fire Protection Organized

Organized: Yes ____ No __X__

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ______

Other: ____________________

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 11

Size: N/A Classrooms: N/A Teachers: 7

---

3. Residential

(1) Number of occupied private dwellings: 55
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 49
(5) Number of rented homes: 6
(6) Number of single detached homes: 51
(7) Number of single attached homes: 4
(8) Average number of persons per private household: 5.2
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: ____________________ N/A

---

4. Community/Institutional/Commercial/Industrial Buildings

Church

Community Hall

Variety Store

Variety Store

Variety Store

General Store

Variety Store

Variety Store

Variety Store

Variety Store

D. ECONOMIC ACTIVITIES

1. Fishery

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	CBC
Telephone	Yes X	No	operator handled
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	Scheduled & Charter
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
1 - 136 kw Cat. with B.B.C. Generator
1 - 136 kw Cat. with Tamper Generator
1 - 220 kw Cat. with B.B.C.Generator
1 - 75 kw Cat. with Tamper Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)		263,814
Annual Fuel Cost	$78,825.00	$104,161.00
Cost per Litre		$0.39
Cost Increase		

4. Electricity Demand - Historical and Predicted (mwh):

1980	535	1985	1116
1981	597	1986	1224
1982	695	1987	1342
1983	896	1988	1472
1984	1018		

5. Peak Load Demand - Historical and Predicted (kw):

1980	174	1985	369
1981	192	1986	406
1982	213	1987	447
1983	294	1988	492
1984	336		

H. Assessment of Resources - St. Lewis

Small Scale Hydro Potential

Available information indicates that there is no potential for hydro development in this area.

Wood Resources

The published data base on the inventory of fuelwood resources in this area is insufficient to formulate definitive conclusions about this alternative. The Statistics Canada data base indicates that approximately 36% of householders use wood as a primary fuel. The potential to increase the use of wood as a primary or secondary fuel requires further study.

Peat Resources

No published fuel peat inventories are available for this area, and consequently, no definitive conclusions can be made about this alternative.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: St. Lewis COMMUNITY: St. Lewis

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWO (tonne
Residential	468 099		180 025		57
Commercial	1 224				
Industrial	25 110				
Government	121 168				
Street Lighting	3 564				
TOTAL	619 165		180 025		57

1982 ENERGY PROFILE

LOAD CENTER: St. Lewis COMMUNITY: St. Lewis

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 685		6 783		4 642	13 110
Commercial	4					4
Industrial	90					90
Government	436					436
Street Lighting	13					13
TOTAL	2 229		6 783		4 642	13 653

4.16 REMOTE COMMUNITY ANALYSIS

Load Centre:	William's Harbour
Communities Serviced:	William's Harbour
Status:	Unincorporated
Location:	Lat: 52° 33' N
	Long: 55° 47' W

Sources of Information:

Publications and Articles

Them Days Magazine, "Alluring Labrador," October 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

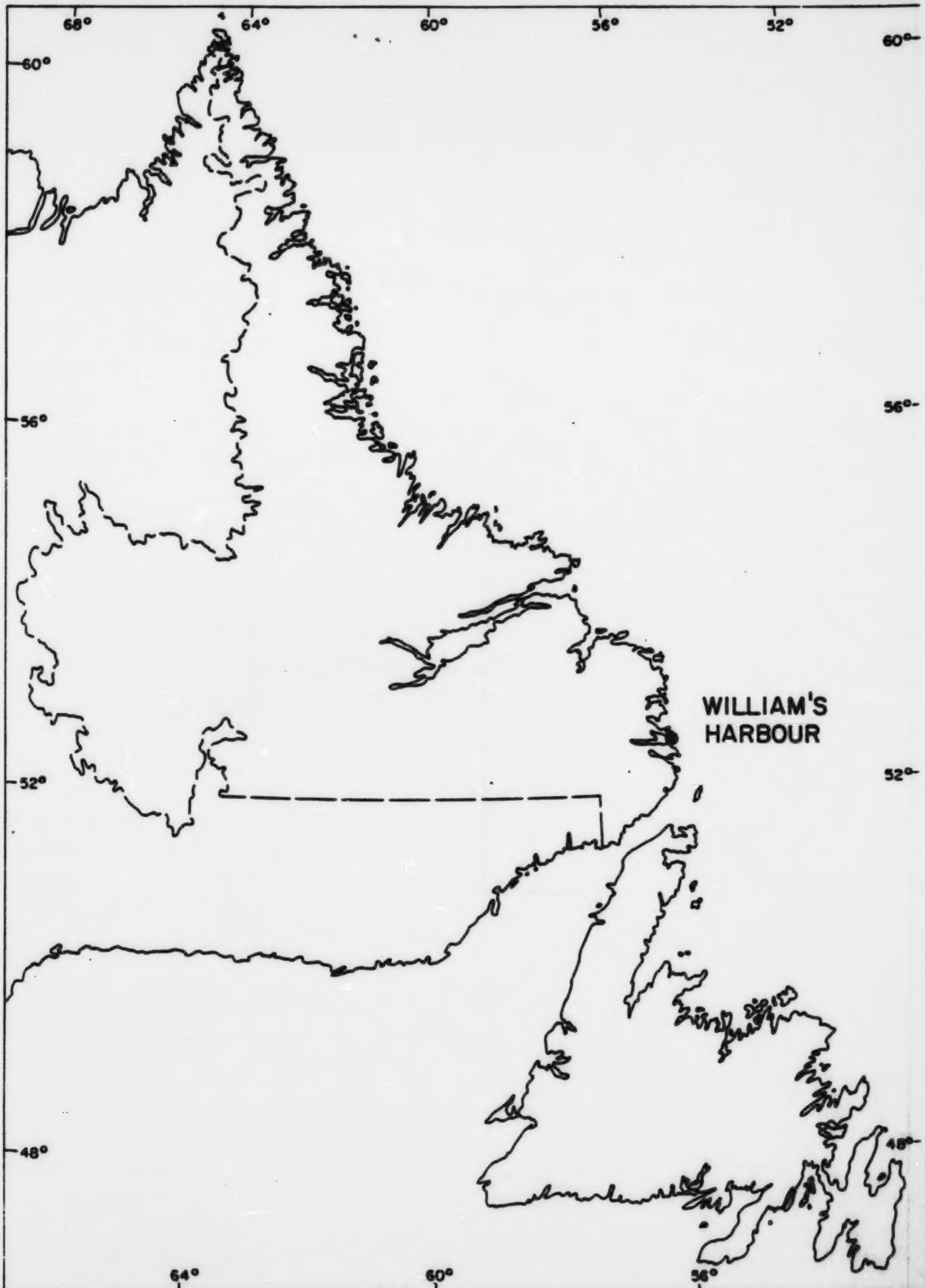
Department of Municipal Affairs and Housing, May and June 1983.

Woodward's Oil Limited, June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.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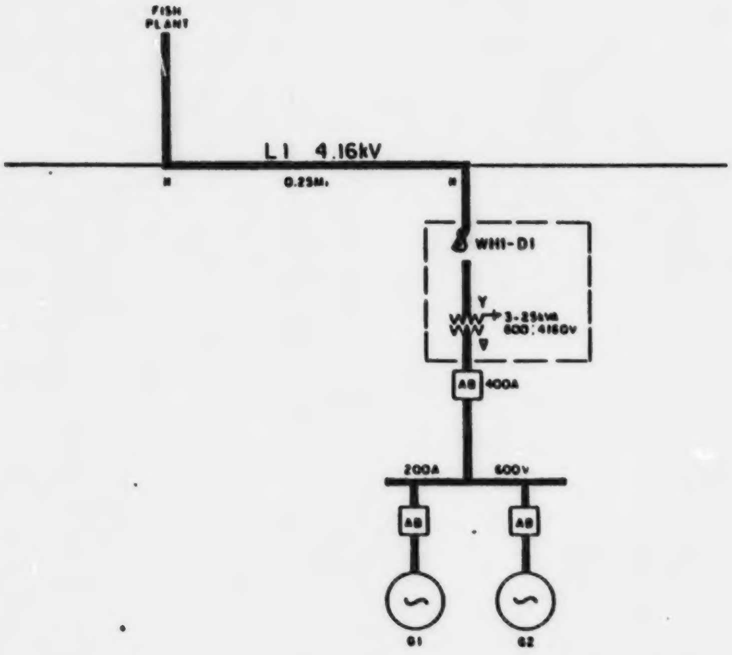

FISH PLANT
L1 4.16kV
0.23Mi
WH1-D1
Y
3-25kVA
600 : 4160V
AB
400A
200A
600V
AB
AB
G1
G2

A. History and Current Status

1. William's Harbour was established in the late 1770's and was used until recent times as a summer fishing station. With the availability of electricity it is now a year-round community, with fishing as the economic mainstay.

2. **Demographics**

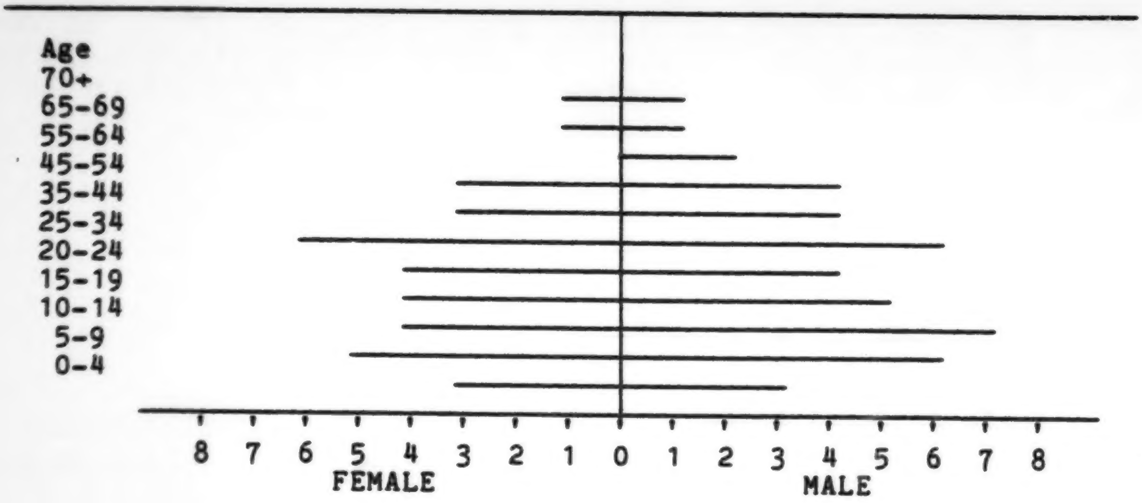
1981 Population: 78

Historic Population

Year	Population	Increase	Growth %	Average Annual Growth %
1966	68			
1971	75	7	10	2.0
1976	61	-14	-23	-4.1
1981	78	17	28	5.0

Source Note: 1981 Census of Canada.

Population Structure by Age and By Gender - 1981



No. of Females - 34 No. of Males - 44

Footnotes 73% of the population is less than 35 years old, which indicates stability and growth potential.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. **Water**

Source:

Lake ___ River ___ Wells X Other ___

Distribution:

Pipe ___ Truck ___ Individual Systems ___ None ___

Serving:

Government Buildings ___ Commercial Buildings ___ Residences X Standpipes ___

Treatment:

Sedimentation ___ Filtration ___ Chlorination ___
Fluoridation ___ None X

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings ____ Commercial Buildings ____ Residences X

Disposal:

Lagoon ____ Septic Tanks X Treatment Plant ____ None ____

3. Solid Waste Disposal

Garbage Collection Organized: Yes ____ No X
Landfill Site Utilized: Yes ____ No X
Other: open dump Yes X No ____

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Mary's Harbour

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. **Health**

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. **Education**

School located in community: Yes X No ____

Grades: Kindergarten to Grade 10

Size: N/A Classrooms: N/A Teachers: 2

---

3. **Residential**

(1) Number of occupied private dwellings: 15
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 15
(5) Number of rented homes: 0
(6) Number of single detached homes: 15
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 5.2
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: ____ N/A

---

4. **Community/Institutional/Commercial/Industrial Buildings**

General Store General Store

General Store

D. ECONOMIC ACTIVITIES

1. Fishing

E. COMMUNICATION LINKS

					Comments
Post Office	Yes	X	No		
Television	Yes		No	X	
Radio	Yes		No	X	
Telephone	Yes	X	No		Operator handled
High Frequency Radio	Yes		No	X	

Operated By: ____________________

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	Charter
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles		X	
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
   1 - 100 kw Cummins with ONAN Generator
   1 - 60 kw Deutz with TAMPER Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	88 582	110 589
Annual Fuel Cost	$30,407.00	$44,924.00
Cost per Litre	$0.34	$0.41
Cost Increase		21%

4. Electricity Demand - Historical and Predicted (mwh):

1980	81	1985	177
1981	146	1986	177
1982	177	1987	177
1983	177	1988	177
1984	177		

5. Peak Load Demand - Historical and Predicted (kw):

1980	50	1985	83
1981	60	1986	83
1982	83	1987	83
1983	83	1988	83
1984	83		

H. Assessment of Resources - William's Harbour

Small Scale Hydro Potential

Available information indicates that there is no potential for hydro developments in this area.

Wood Resources

The published data base on the inventory of fuelwood resources in this area is insufficient to formulate definitive conclusions about this alternative. The Statistics Canada data base indicates that approximately 36% of householders use wood as a primary fuel. The potential to increase the use of wood as a primary or secondary fuel requires further study.

Peat Resources

No published fuel peat inventories are available for this area, and consequently, no definitive conclusions can be made about this alternative.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: William's Harbour COMMUNITY: William's Harbour

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	115 157		65 464		209
Commercial					
Industrial	37 440				
Government					
Street Lighting	2 475				
TOTAL	155 072		65 464		209

1982 ENERGY PROFILE

LOAD CENTER: William's Harbour COMMUNITY: William's Harbour

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	415		2 467		1 690	4 572
Commercial						
Industrial	135					135
Government						
Street Lighting	9					9
TOTAL	558		2 467		1 690	4 716

PINSENT'S ARM

COMMUNITY: PINSENT'S ARM

STATUS: Unincorporated
LOCATION: Lat.: 52° 41'
Long.: 55° 54'

A DEMOGRAPHICS

Population (1984) : 51

Population Structure by Age and by Gender - 1984

```
      Male                Age               Female
8 7 6 5 4 3 2 1 0                      0 1 2 3 4 5 6 7 8

            |---|     55 - 64          |
              |-|     45 - 54          |-----|
            |---|     35 - 44          |-|
|---------------|     25 - 34          |---------------|
            |---|     20 - 24          |---|
            |---|     15 - 19          |---|
        |-------|     10 - 14          |-|
            |---|      5 -  9          |-----|
      |---------|      0 -  4          |-----|
```

Male Population: 28   23 :Female Population

1984 PESIDENTIAL ENERGY PROFILE

	QUANTITY	ENERGY VAUE	COMMENTS
Fuel Wood	130 tonnes	1060	
Gasoline	1500 liters	240 GJ	For Snowmobile and Chainsaw while obtaining wood.
Diesel Fuel	5000 liters	260	For generating electricity for community use
Furnace Oil	6400 liters*	250 GJ	
TOTAL		1810 GJ	

*Teacher's Residence/School treated as one residence and is sole user of furnace oil in community.

B COMMUNITY SERVICES

Water

Source:

Lake: ____ River ____ Wells ____ Other _X__ Stream /Pond During Winter

Distribution

Pipe ____ Truck ____ Individual Systems ____ None _X__ Piped From Stream to Near the Community

Serving:

Government Buildings ____ Commercial Buildings ____ Residences ____ Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____

Fluoridation ____ None _X__

Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems ____ None _X__

Serving:

Government Buildings ____ Commercial Buildings ____ Residences ____

Disposal:

Lagoon ____ Septic Tanks _X__ Treatment Plant ____ None _X__

Solid Waste Disposal

Garbage Collection Organized: Yes ____ No _X__

Landfille Site Utilized: Yes ____ No _X__

Other: ________________ Yes ____ No _X__

Police Protection

R.C.M.P.: Yes X No ___

Patrolled from: Mary's Harbour

Fire Protection Organized:

Organized: Yes ___ No X

Equipment: ___

C COMMUNITY FACILITIES

Health

Clinic in Community: Yes ___ No X

Size of Facility: ___

Staff: Doctors ___ Nurses ___

Other ___

Education

School located in community: Yes X No ___

Grades: 1 - 8

Size: N/A Classrooms: 1 Teachers: 2

Residential

(1) Number of occupied private dwellings: 11
(2) Number of Houses with sewer and water: NONE

(3) Housing Condition:

(4) Number of owned homes: 10
(5) Number of rented homes: 1
(6) Number of single detached homes: 10
(7) Number of single attached homes: 1
(8) Average number of persons per private household: 4, 6
(9) Dwellings heated by steam or hot water:
(10) Dwellings heated by hot air:
(11) Dwellings heated with stove or space heater:
(12) Dwellings heated by electric heat:
(13) Other:

Community/Institutional/Commercial/Industrial Buildings

Gov't Fish Handling Area	Not Heated/Cooled by Ice

D ECONOMIC ACTIVITIES

1. Fishing
2.
3.

E COMMUNICATION LINKS

	Yes	No	Comments
Post Office		X	Charlottetown
Television	X		CBC
Radio	X		CBC
Telephone	X		1 Radiophone/Citizen Band Radio
High Frequency Radio			

F TRANSPORTATION LINKS

Access to Community By Scheduled Services

	Carrier	Type
Air	LABAIR	To Charlottetown
Marine	CN Coastal Boat	As Scheduled
Bus	N/A	–
Other	N/A	

Local Transportation

	Yes	No	Type
Boats	X		Fishing
Snowmobiles	X		
Cars		X	
Heavy Vehicles		X	
Other		X	

NORMAN BAY

COMMUNITY:	NORMAN BAY
STATUS:	Unincorporated
LOCATION:	Lat.: 52° 56'
	Long.: 55° 54'

A DEMOGRAPHICS

Population (1984) : 56

Population Structure by Age and by Gender - 1984

```
     Male                Age                 Female
8 7 6 5 4 3 2 1 0                       0 1 2 3 4 5 6 7 8

              |-|      65 - 69          |
                |      55 - 64          |-|
                |      45 - 54          |-|
          |-----|      35 - 44          |---|
    |-----------|      25 - 34          |---------------|
          |-----|      20 - 24          |-|
        |-------|      15 - 19          |-|
  |-------------|      10 - 14          |---|
  |-------------|       5 -  9          |-----|
      |---------|       0 -  4          |---|
```

Male Population: 36

20 :Female Population

1984 RESIDENTIAL ENERGY PROFILE

	QUANTITY	ENERGY VAUE (GJ)	COMMENTS
Fuel Wood	130 tonnes	1060	For cooking, space and water heating
Stove Oil	160 liters	6	For heating, only one household
Kerosene	2900 liters	126	For lighting
Gasoline	3800 liters	182	For snowmobile and chainsaw while obtaining wood
Gasoline	480 liters	23	For generator (only three in community)
Furnace Oil	6400 liters*	250	
TOTAL		1810 GJ	

*Two classroom school no information available of usage, estimated that it consumes similar quantities of fuel as the school/residence in Pinsent's Arm.

B COMMUNITY SERVICES

Water

Source:

Lake: X River X Wells ____ Other ____ Stream /Pond During Winter

Distribution

Pipe ____ Truck ____ Individual Systems ____ None X Piped From Stream to Near the Community

Serving:

Government Buildings ____ Commercial Buildings ____ Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____

Fluoridation ____ None X

Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems ____ None X

Serving:

Government Buildings ____ Commercial Buildings ____ Residences X

Disposal:

Lagoon ____ Septic Tanks ____ Treatment Plant ____ None X

Solid Waste Disposal

Garbage Collection Organized: Yes ____ No X

Landfille Site Utilized: Yes ____ No X

Other: ________________ Yes ____ No X

Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Mary's Harbour

Fire Protection Organized:

Organized: Yes ____ No X

Equipment: ____________

C COMMUNITY FACILITIES

Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors ____ Nurses ____________

Other ____________

Education

School located in community: Yes X No ____

Grades: K - 9

Size: N/A Classrooms: 2 Teachers: 2

Residential

(1) Number of occupied private dwellings: 12
(2) Number of Houses with sewer and water: NONE

(3) Housing Condition: Poor

(4) Number of owned homes: 12
(5) Number of rented homes:
(6) Number of single detached homes: 12
(7) Number of single attached homes:
(8) Average number of persons per private household: 4, 7
(9) Dwellings heated by steam or hot water:
(10) Dwellings heated by hot air:
(11) Dwellings heated with stove or space heater: X
(12) Dwellings heated by electric heat:
(13) Other:

Community/Institutional/Commercial/Industrial Buildings

School - 2 Room

D ECONOMIC ACTIVITIES

1. Fishing Summer
2. Trapping Winter
3.

E COMMUNICATION LINKS

	Yes	No	Comments
Post Office		X	
Television	X		CBC - FOX HR.
Radio	X		CBC - FOX HR.
Telephone	X		A. Ward
High Frequency Radio		X	

F TRANSPORTATION LINKS

Access to Community By Scheduled Services

	Carrier	Type
Air	LABAIR	To Charlottetown
Marine	CN Coastal Boats	To nearby summer fishing communities
Bus	N/A	
Other	N/A	

Local Transportation

	Yes	No	Type
Boats	X		Longliner/open speed boat
Snowmobiles	X		
Cars		X	
Heavy Vehicles		X	
Other		X	

5.0 Profiles and Assessments by Load Centre and Community - Northern Newfoundland

5.1 REMOTE COMMUNITY ANALYSIS

Load Centre: Croque

Communities Serviced: Croque

Status: Unincorporated

Location: Lat: 51° 02' N
Long: 55° 48' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

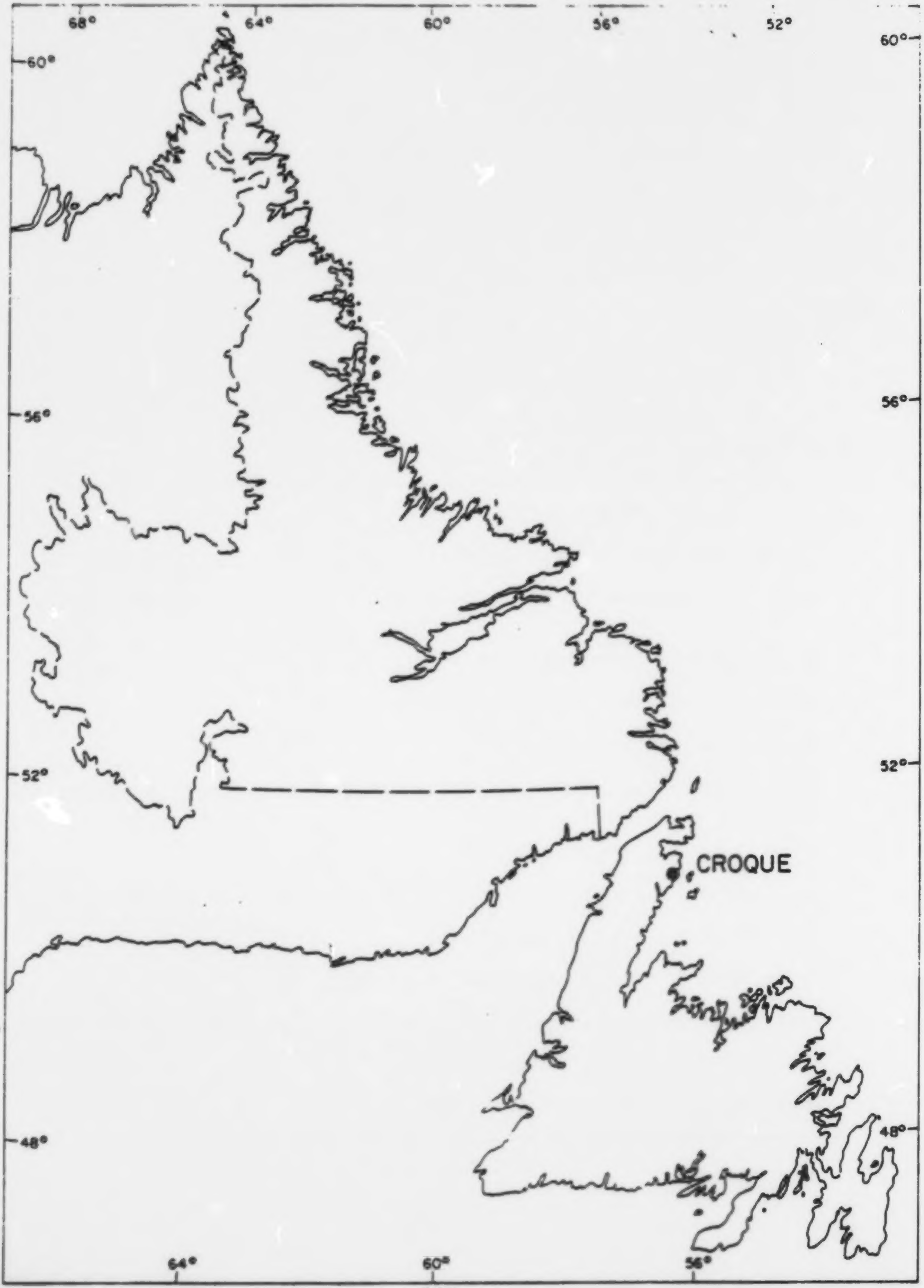
Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.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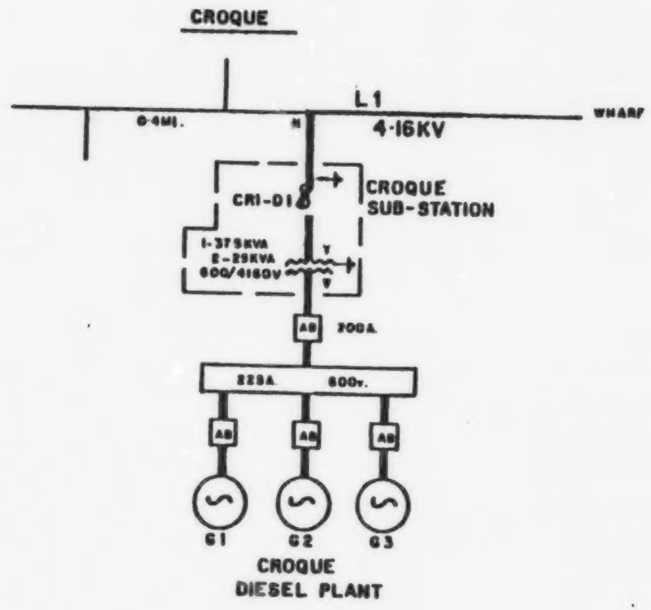

CROQUE
L1
4·16KV
0·4MI.
N
WHARF
CRI-D1
CROQUE
SUB-STATION
1-37.5KVA
2-25KVA
600/4160V
Y
Y
AB
200A.
225A.
600v.
AB
AB
AB
G1
G2
G3
CROQUE
DIESEL PLANT

APPROVED BY : W.F.R.	NEWFOUNDLAND AND LABRADOR HYDRO	S- 1 of 1
DATE : 81/01/26	CROQUE DISTRIBUTION SYSTEM	DWG No. 211-1
REVISION No.: 4		

A. History and Current Status

1. N/A

2. Demographics

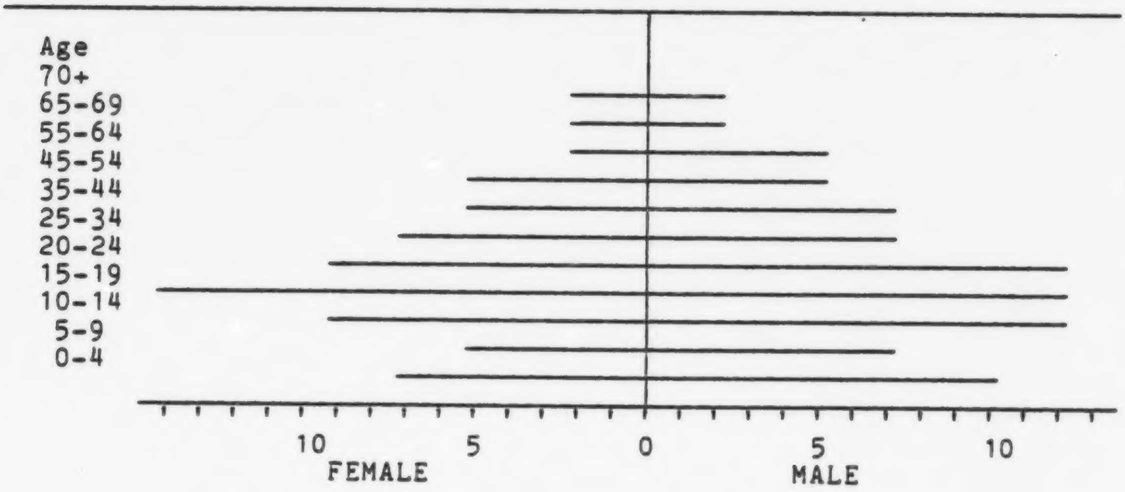
1981 Population: 147

Historic Population

Year	Population	Increase	Growth %	Average Annual Growth %
1966	165			
1971	120	-45	-37.5	-6.2
1976	141	21	17.5	3.3
1981	147	6	4.3	0.8

Source Note: 1981 Census of Canada.

Population Structure by Age and By Gender - 1981



No. of Females - 67 No. of Males - 80

Footnotes

There is a fairly young population, with 75% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake _____ River _____ Wells X Other _______________

Distribution:

Pipe _____ Truck _____ Individual Systems _____ None _____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation _____ Filtration _____ Chlorination _____
Fluoridation _____ None _____

---

2. Sewage

Collection System:

Pipe _____ Truck _____ Individual Systems X None _____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon ____ Septic Tanks X Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes _____ No X
Landfill Site Utilized: Yes _____ No X
Other: Yes _____ No X

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Roddickton

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 11

Size: N/A Classrooms: N/A Teachers: 5

3. Residential

(1) Number of occupied private dwellings: 26
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 26
(5) Number of rented homes: 0
(6) Number of single detached homes: 26
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 5.7
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	
Telephone	Yes X	No	
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	CN Coastal Boats	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 1 - 40 kw Deutz with Tamper Generator
2 - 60 kw Deutz with Tamper Generators

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	112 812	119,722
Annual Fuel Cost	$29,221.00	$35,831.00
Cost per Litre	$0.26	$0.30
Cost Increase		15%

4. Electricity Demand - Historical and Predicted (mwh):

1980	176	1985	273
1981	184	1986	299
1982	214	1987	327
1983	228	1988	359
1984	249		

5. Peak Load Demand - Historical and Predicted (kw):

1980	57	1985	94
1981	69	1986	103
1982	72	1987	113
1983	77	1988	125
1984	85		

H. ASSESSMENT OF RESOURCES - Croque

Small Scale Hydro Potential

There are three possible sites within approximately 2 km. of the nearest transmission line. The largest of these is located on Freshwater Creek, approximately 2 km. from the community. It has a nominal capacity of 195 kw. through a head of approximately 4 M. Next in size is a site on Le Fond Brook, approximately 1.2 km. from the community. It has a nominal capacity of 60 kw. through a head of approximately 4 M. A slightly smaller site is located on Croque Brook, approximately 1.6 km. from the community. It has a nominal capacity of 55 kw. through a head of approximately 11 M.

The site on Le Fond Brook could be developed to serve either or both Croque and Grandois and appears in the hydro inventory for Grandois as well.

Wood Resources

The immediate vicinity of Croque within 5 km. contains lands having severe limitations which preclude the growth of commercial forests. Shallow, stony soils, low fertility and exposure are all contributing factors. Between 60 to 80% of this land can support growth of less than 10 $ft.^3$ per acre per year, with about 20 to 40% able to support from 11 to 30 $ft.^3$ per acre per year. Further inland between 5 and 10 km. along the access road, lands having moderately severe to severe limitations for commercial growth are found. About 50 % of this area is capable of supporting growths of 50 to 70 $ft.^3$ per acre per year. The remaining areas are about equally divided between growth of 31 to 50 $ft.^3$ per acre per year down to 11 to 30 $ft.^3$ per acre per year. Dominant species are balsam fir and black spruce, although other species such as birch and tamarack are common. The timber rights are owned by the Crown to within 5 km. of the community, while Bowater Newfoundland Limited owns the remaining areas. Statistics Canada information indicates that approximately 35% of households use wood as a principal heating fuel. While further potential appears limited given the facts outlined above, additional study is required.

Peat Resources

The Provincial Government's fuel peat survey of 1981 shows that there are 600 hectares of fuel peat with a volume of about 6 $M3 \times 10^6$ in the area of Croque. The most significant deposit identified from topographical information is located about 10 km. from Croque and St. Julian's. Further investigation of peat resources in this area is recommended.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

As is the case for the nearby community of Grandois, the small size of the most promising small scale hydro developments in the area result in prohibitively high unit energy costs. The most promising site in the area has an Annual Equivalent Cost of $0.60 per kwh. and is clearly not competitive with diesel fuel at $0.25 per kwh.

The limited availability of sustainable wood fuel resources indicates limited potential for this alternative as a source of either heating or electrical generation.

In the case of wind, additional studies are required to properly evaluate the potential of this energy source, as existing data is inadequate to allow for serious analysis.

Croque shares with Grandois and St. Julian's the same substantial reserves of fuel peat which constitute the most promising alternative energy source in the area. Further research and analysis is recommended to evaluate the economics of this energy form as a heating and/or electrical generation source.

1982 ENERGY PROFILE

LOAD CENTER: Croque COMMUNITY: Croque

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	152 443	69 555	7 728		196
Commercial	17 888				
Industrial					
Government					
Street Lighting	2 376				
TOTAL	172 707	69 555	7 728		196

1982 ENERGY PROFILE

LOAD CENTER: Croque COMMUNITY: Croque

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	549	2 690	291		1 585	5 115
Commercial	64					64
Industrial						
Government						
Street Lighting	9					9
TOTAL	622	2 690	291		1 585	5 188

5.2 REMOTE COMMUNITY ANALYSIS

Load Centre:	Harbour Deep
Communities Serviced:	Harbour Deep
Status:	Incorporated
Location:	Lat: 50° 22' N
	Long: 56° 31' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

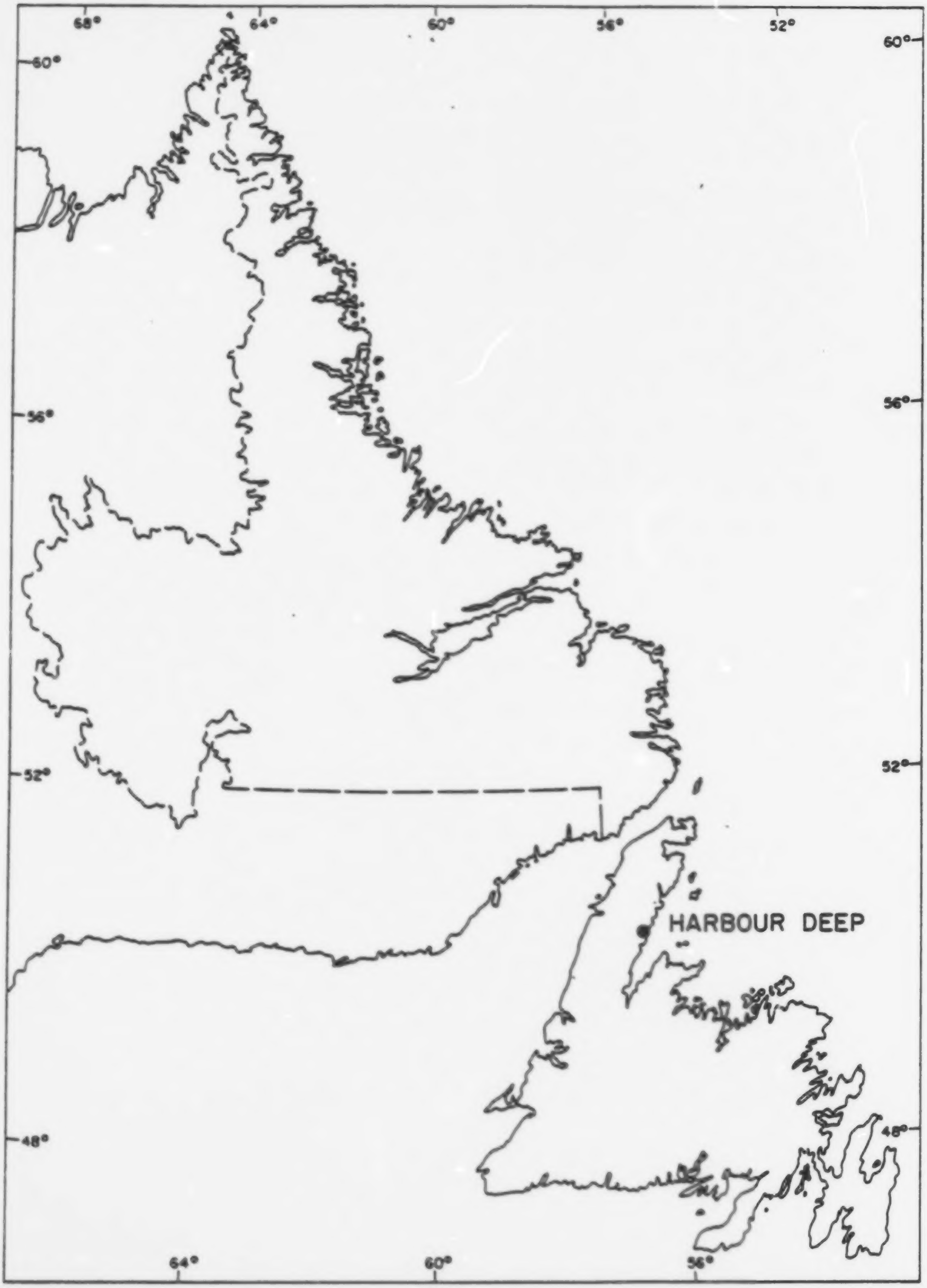
Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.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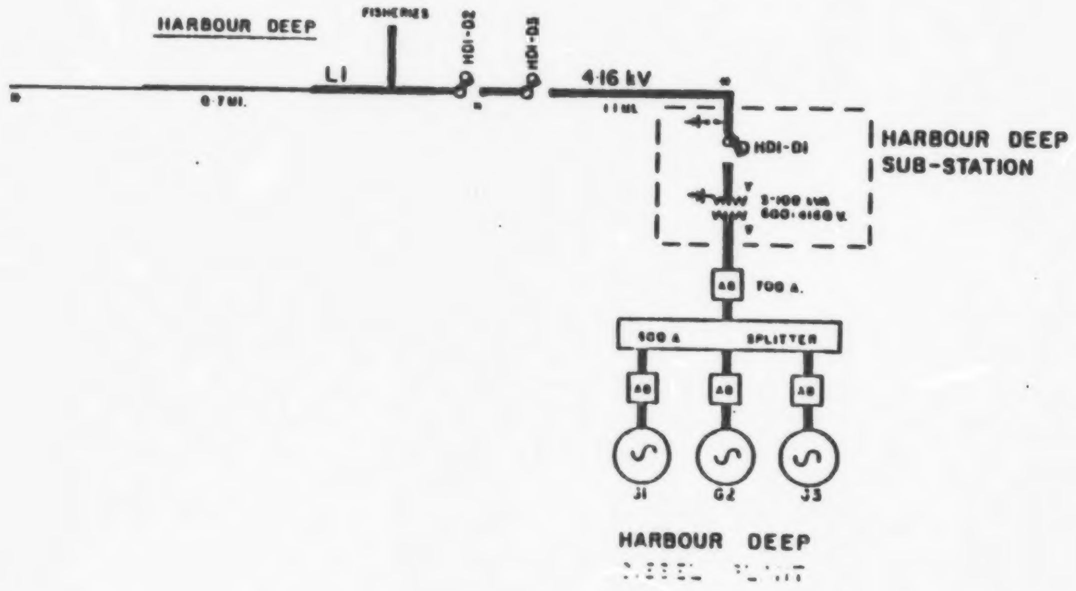
HARBOUR DEEP



HARBOUR DEEP
FISHERIES
L1
0.7 MI.
HDI-02
HDI-03
4.16 kV
1.1 MI.
HARBOUR DEEP SUB-STATION
HDI-01
3-100 kVA
600:4160 V.
700 A.
900 A
SPLITTER
AB
AB
AB
AB
G1
G2
G3
HARBOUR DEEP
DIESEL PLANT

APPROVED BY: W.P.B	NEWFOUNDLAND AND LABRADOR HYDRO	Sh 1 of 1
DATE: 83-01-07	HARBOUR DEEP DISTRIBUTION SYSTEM	Dwg No. 307-1
REVISION No.: 4		

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 278

Historic Population

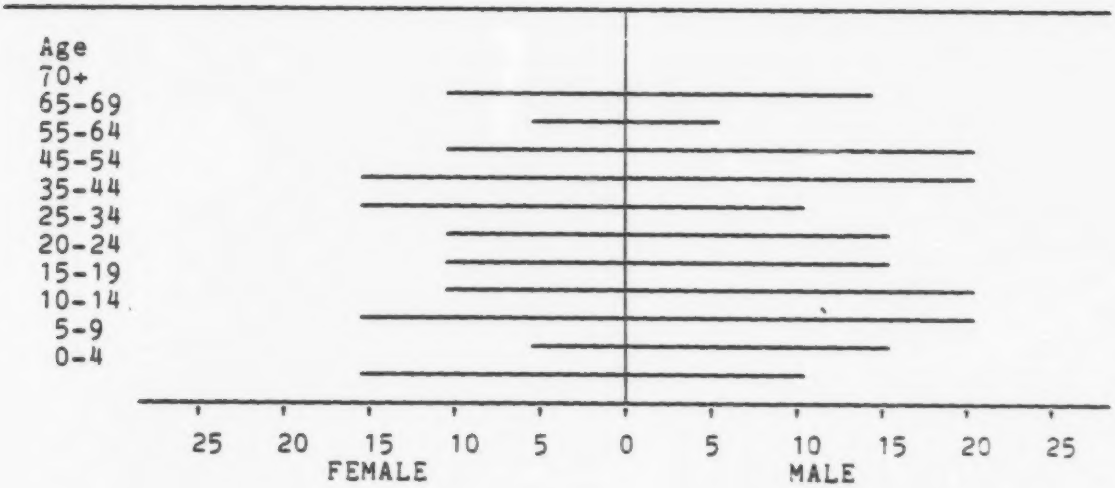
Year	Population	Increase	Growth %	Average Annual Growth %
1966	334			
1971	329	-5	-2	-0.3
1976	303	-26	-9	-1.6
1981	278	-25	-9	-1.7

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

Unknown

Population Structure by Age and By Gender - 1981



No. of Females - 124 No. of Males - 154

Footnotes: Although the population has been declining, the community has a young population, with 66% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ___ Wells ___ Other ___

Distribution:

Pipe X Truck ___ Individual Systems ___ None ___

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ___ Filtration ___ Chlorination ___
Fluoridation ___ None X

2. **Sewage**

Collection System:

Pipe ___ Truck ___ Individual Systems _X_ None ___

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_

Disposal:

Lagoon _X_ Septic Tanks ___ Treatment Plant ___ None ___

---

3. **Solid Waste Disposal**

Garbage Collection Organized: Yes ___ No _X_
Landfill Site Utilized: Yes ___ No _X_
Other: open dump Yes _X_ No ___

---

4. **Police Protection**

R.C.M.P.: Yes _X_ No ___

Patrolled from: Roddickton

---

5. **Fire Protection Organized**

Organized: Yes ___ No _X_

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten - Grade 9

Size: N/A Classrooms: N/A Teachers: 5

---

3. Residential

(1) Number of occupied private dwellings: 70
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: 65, good; 5 need minor repair
(4) Number of owned homes: 70
(5) Number of rented homes: 0
(6) Number of single detached homes: 65
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 4.0
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 15
(11) Dwellings heated with stove or space heater: 55
(12) Dwellings heated by electric heat: 0
(13) Other: ____ 0

---

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

1. Fishing

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	Harbour Deep
Television	Yes X	No	CBC
Radio	Yes X	No	Various Signals
Telephone	Yes X	No	Exchange Service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	CN Marine	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles	X		
Cars		X	
Heavy Vehicles		X	
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 3 - 136 kw Cat. with LEROY SOMER Generators
1 - 250 kw Cat. with TAMPER Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	300,195	276,235
Annual Fuel Cost	$95,977.00	$107,622.00
Cost per Litre	$0.32	$0.39
Cost Increase		22%

4. Electricity Demand - Historical and Predicted (mwh):

1980	704	1985	738
1981	776	1986	738
1982	742	1987	738
1983	738	1988	738
1984	738		

5. Peak Load Demand - Historical and Predicted (kw):

1980	221	1985	232
1981	236	1986	232
1982	232	1987	232
1983	232	1988	232
1984	232		

H. ASSESSMENT OF RESOURCES - Harbour Deep

Small Scale Hydro Development

There are ten possible sites within approximately 7 km. of the nearest transmission line. The closest of these sites is on Lower Harbour Deep Brook, approximately 0.6 km. from the nearest transmission line. It has a nominal capacity of 190 kw. through a head of approximately 12 M. A site on the east branch of Harbour Deep Brook is located 1.4 km. from the nearest transmission line and has a nominal capacity of 550 kw. through a head of approximately 110 M. Another site on the west branch of the same river has an estimated nominal capacity of 315 kw. through a head of approximately 37 M. This site is 2.7 km. from the nearest transmission line.

Two more possible sites are located on Sault Arm Brook. The lower site is 1.6 km. from the community and has a nominal capacity of 250 kw. through a head of approximately 20 M. The upper site is 1.9 km. from the community and has a nominal capacity of 575 kw. through a head of approximately 46 M. The largest site is located on Sault Arm River, 2.8 km. from the community. it has an estimated nominal capacity of 1.8 mw. through a head of approximately 18 M.

The remaining four sites are more distant from the community. They are: Jacques Cove Brook, 4 km. from the community, with a nominal capacity of 345 kw. through a head of approximately 46 M; Northeast Arm Brook, 5 km. from the community, with a nominal capacity of 390 kw. through a head of approximately 37 M.; Southeast Head Brook, 6 km. from the community, with a nominal capacity of 510 kw. through a head of approximately 60 M; and Soufflet's Arm Brook, 6.4 km. from the community, with a nominal capacity of 490 kw. through a head of approximately 34 M.

Wood Resources

The land surrounding Harbour Deep has severe limitations to the growth of mature forests. This area contains soils that are thin, stony and low in fertility. About 60% of the highlands surrounding the community can support a growth of between 11 and 30 ft.^{3} per acre per year. The remainder has potential for less than 10 ft.^{3} per acre per year. The lower land, especially in the valleys, is mixed, but about 30% of the area can support growths of between 31 and 50 ft.^{3} per acre per year, 40% can support 11 to 30 ft.^{3} per acre per year, and 30%, less than 10 ft.^{3} per acre per year. Dominant species are black spruce and balsam fir. Other species such as birch and tamarack are available in less quantities. Although growth is relatively slow, ther are very large tracts of forest available in this somewhat mountainous terrain. The timber rights are owned by Abitibi-Price Pulp and Paper Company Limited, except for a narrow strip about 5 km. wide along the coastline.

The Statistics Canada data base indicates that approximately 79% of householders use wood as a primary heating source. The potential to increase the use of wood as a primary or secondary fuel appears limited but nevertheless requires further study.

Peat Resources

The Provincial Government's fuel peat survey of 1981 does not mention a potential for fuel peat in the Harbour Deep area. No bogs are shown on the topographical sheets of the area. No further investigation of fuel peat is recommended in this area.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

Small scale hydro development shows some potential here, with the Sault Arm River scheme being the most promising. Capital costs for this scheme are estimated to be between $1.0 and $1.2 million. The Annual Equivalent Cost for energy is estimated to be approximately $0.19 per kwh., which compares favourably with the Annual Equivalent Cost of diesel-generated electricity at $0.25 per kwh.

Due to the mountainous terrain, poor soil conditions, and the fact that the timber rights in the area are owned by Abitibe-Price Pulp and Paper Company, with the exception of a narrow strip approximately 5 km. wide along the coast, the potential for additional fuelwood use in the area appears limited.

The data base on wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Harbour Deep COMMUNITY: Harbour Deep

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	524 149	61 372	6 819		1 196
Commercial	15 524				
Industrial					
Government	42 289				
Street Lighting	14 256				
TOTAL	596 218	61 372	6 819		1 196

1982 ENERGY PROFILE

LOAD CENTER: Harbour Deep COMMUNITY: Harbour Deep

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 887	2 374	257		9 673	14 191
Commercial	56					56
Industrial						
Government	152					152
Street Lighting	51					51
TOTAL	2 146	2 374	257		9 673	14 450

5.4 REMOTE COMMUNITY ANALYSIS

Load Centre: Main Brook

Communities Serviced: Main Brook

Status: Incorporated Town

Location: Lat: 51° 11' N
Long: 56° 01' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

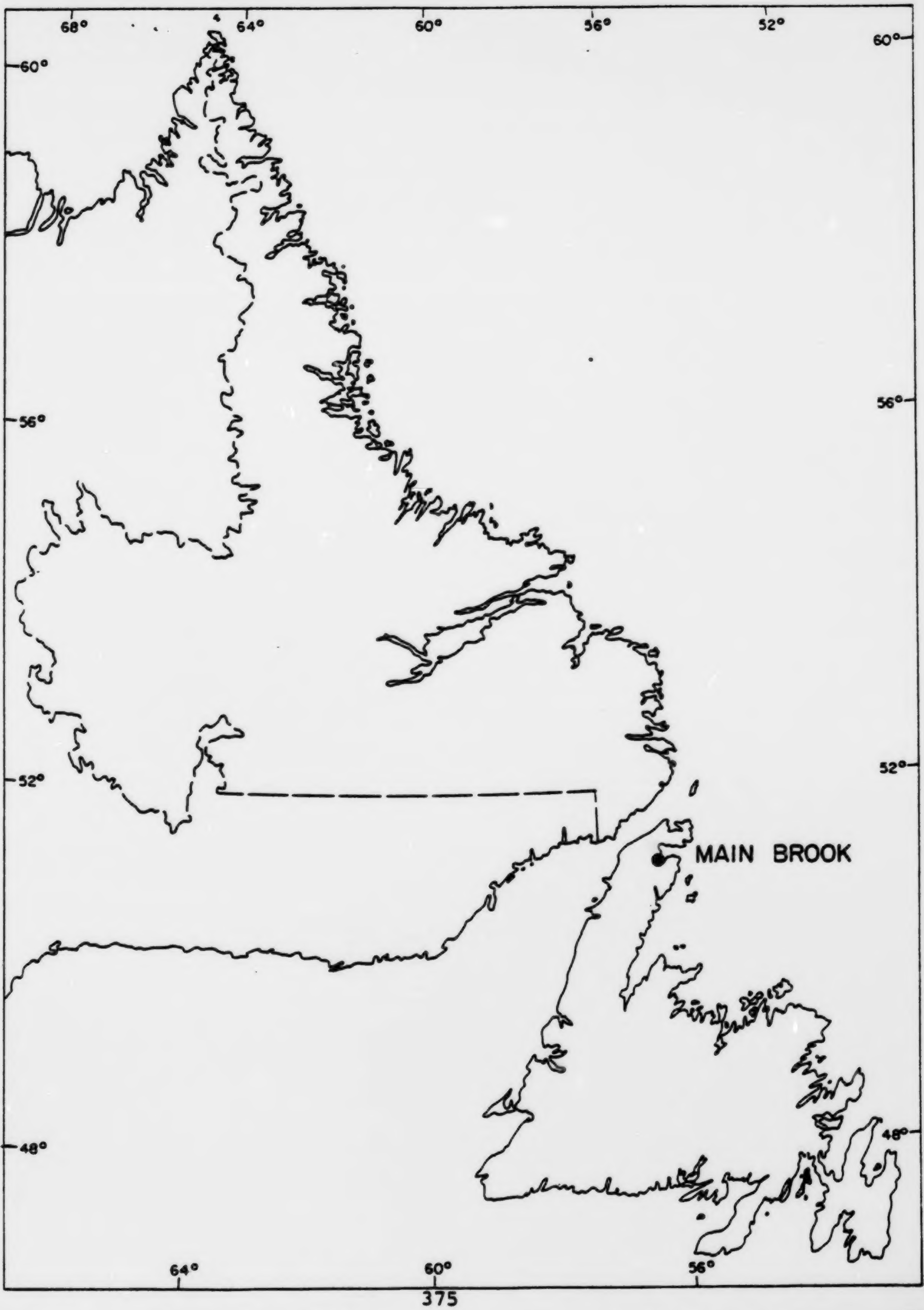
Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.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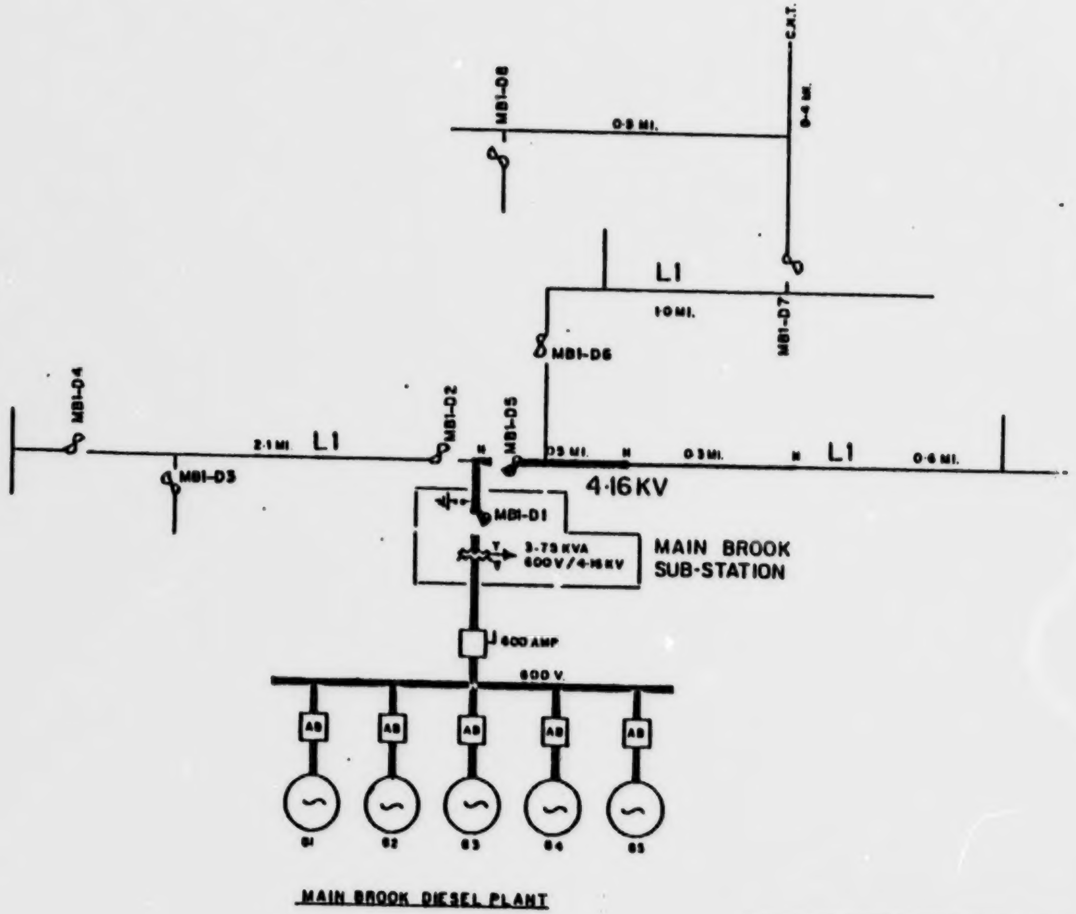
MAIN BROOK


C.K.T.
0·4 MI.
MBI-D8
0·8 MI.
L1
1·0 MI.
MBI-D7
MBI-D6
MBI-D4
2·1 MI.
L1
MBI-D2
MBI-D3
MBI-D5
0·3 MI.
0·3 MI.
L1
0·6 MI.
4·16 KV
MBI-D1
3-75 KVA
600 V/4·16 KV
MAIN BROOK
SUB-STATION
600 AMP
600 V.
AB
AB
AB
AB
AB
G1
G2
G3
G4
G5
MAIN BROOK DIESEL PLANT

APPROVED BY W.F.R.	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 of 1
DATE : 81/01/26	MAIN BROOK DISTRIBUTION SYSTEM	DWG No 209-1
REVISION No.: 2		

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 514

Historic Population

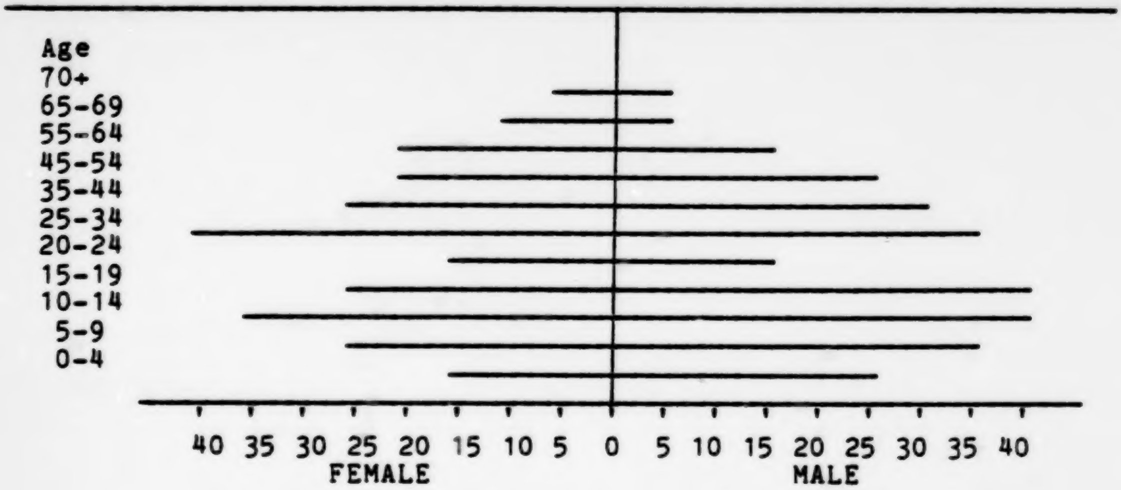
Year	Population	Increase	Growth %	Average Annual Growth %
1976	551			
1981	514	-37	-6.7	-1.3

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

Unknown

Population Structure by Age and By Gender - 1981



No. of Females - 230 No. of Males - 284

Footnotes

There is a fairly young population, with 67% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ____ Wells ____ Other ____________

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination X
Fluoridation ____ None ____

2. Sewage

Collection System:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes X No ____
Other: Yes ____ No X

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Roddickton

---

5. Fire Protection Organized

Organized: Yes X No ____

Equipment: hydrants

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes No X

Size of Facility:

Staff: Doctors: Nurses:

Other:

---

2. Education

School located in community: Yes 2 No

Grades: Grade 7 to Grade 11; Kindergarten to Grade 6

Size: N/A Classrooms: N/A Teachers: 5/5

---

3. Residential

(1) Number of occupied private dwellings: 125
(2) Number of houses with sewer and water:
(3) Housing Condition: 45, very good; 35 need minor repair; 40 need major repair
(4) Number of owned homes: 115
(5) Number of rented homes: 10
(6) Number of single detached homes: 120
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 4.1
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 35
(11) Dwellings heated with stove or space heater: 70
(12) Dwellings heated by electric heat: 0
(13) Other: 15

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	
Telephone	Yes X	No	
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
1 - 250 kw Cat. with Tamper Generator
1 - 250 kw Deutz with Tamper Generator
2 - 136 kw Cat. with B.B.C. Generators
1 - 60 kw Deutz with Tamper Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	391 376	371,087
Annual Fuel Cost	$102,828.00	$108,984.00
Cost per Litre	$0.26	$0.29
Cost Increase		12%

4. Electricity Demand - Historical and Predicted (mwh):

1980	960	1985	1228
1981	993	1986	1293
1982	1054	1987	1364
1983	1106	1988	1437
1984	1165		

5. Peak Load Demand - Historical and Predicted (kw):

1980	240	1985	370
1981	252	1986	375
1982	336	1987	381
1983	358	1988	387
1984	364		

H. ASSESSMENT OF RESOURCES - Main Brook

Small Scale Hydro Potential

Available information indicates that there is no potential for hydro developments in this area.

Wood Resources

The land immediately surrounding Main Brook for about 7 km. has severe limitations to the growth of commercial forests, including soil moisture deficiency and bedrock. About 50% of the land to the south and east can support growths of 11 to 30 ft.^{3} per acre per year. About 30% can support 31 to 50 ft.^{3}, while another 30% can support less than 10 ft.^{3} per acre per year. To the northeast of the community the land can only support less than 10 ft.^{3} per acre per year. This is mainly due to excessive soil moisture and low fertility.

Within 10 km. of the community to the west there are lands having moderately severe to severe limitations for commercial growth. 60% of this area is capable of supporting growths of 51 to 70 ft.^{3} per acre per year. 20% of remaining areas can support 31 to 50 ft.^{3}, and 20% less than 31 ft.^{3} per acre per year. Dominant species in all areas are the balsam fir and black spruce, although other species such as birch and tamarack are common.

Despite slow growth, there are very large tracts of forest in the area. Timber rights are owned by the Crown close to the community, and by Bowater Newfoundland Limited in the inland areas. Statistics Canada information indicates that approximately 40% of households use wood as a primary heating fuel. The potential use of wood as a heating source requires closer examination.

Peat Resources

The Provincial Government's fuel peat survey of 1981 shows that there are about 200 hectares with 2 M.^{3} X 10^6 of fuel peat available in the Main Brook area. Much of this fuel exists within 5 km. of the community. This source of energy should be examined more closely.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

The large tracts of forest in the area, with timber rights owned by the Crown close to the community, suggest some potential for wood energy. Additional research is required and recommended to evaluate the potential of this energy source for both heating and electrical generation applications.

The substantial quantities of fuel peat available in the area show significant potential as well. As with wood, it is recommended that additional research be conducted to assess the potential of this source for both heating and electrical generation applications.

With no information available on wind and conservation potential, no assessment can be made of these options. Further research is necessary before serious evaluation can be performed.

1982 ENERGY PROFILE

LOAD CENTER: Main Brook COMMUNITY: Main Brook

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	799 942	272 765	40 915		978
Commercial	46 524				
Industrial	7 976				
Government	78 428				
Street Lighting	17 739				
TOTAL	950 609	272 765	40 915		978

1982 ENERGY PROFILE

LOAD CENTER: Main Brook COMMUNITY: Main Brook

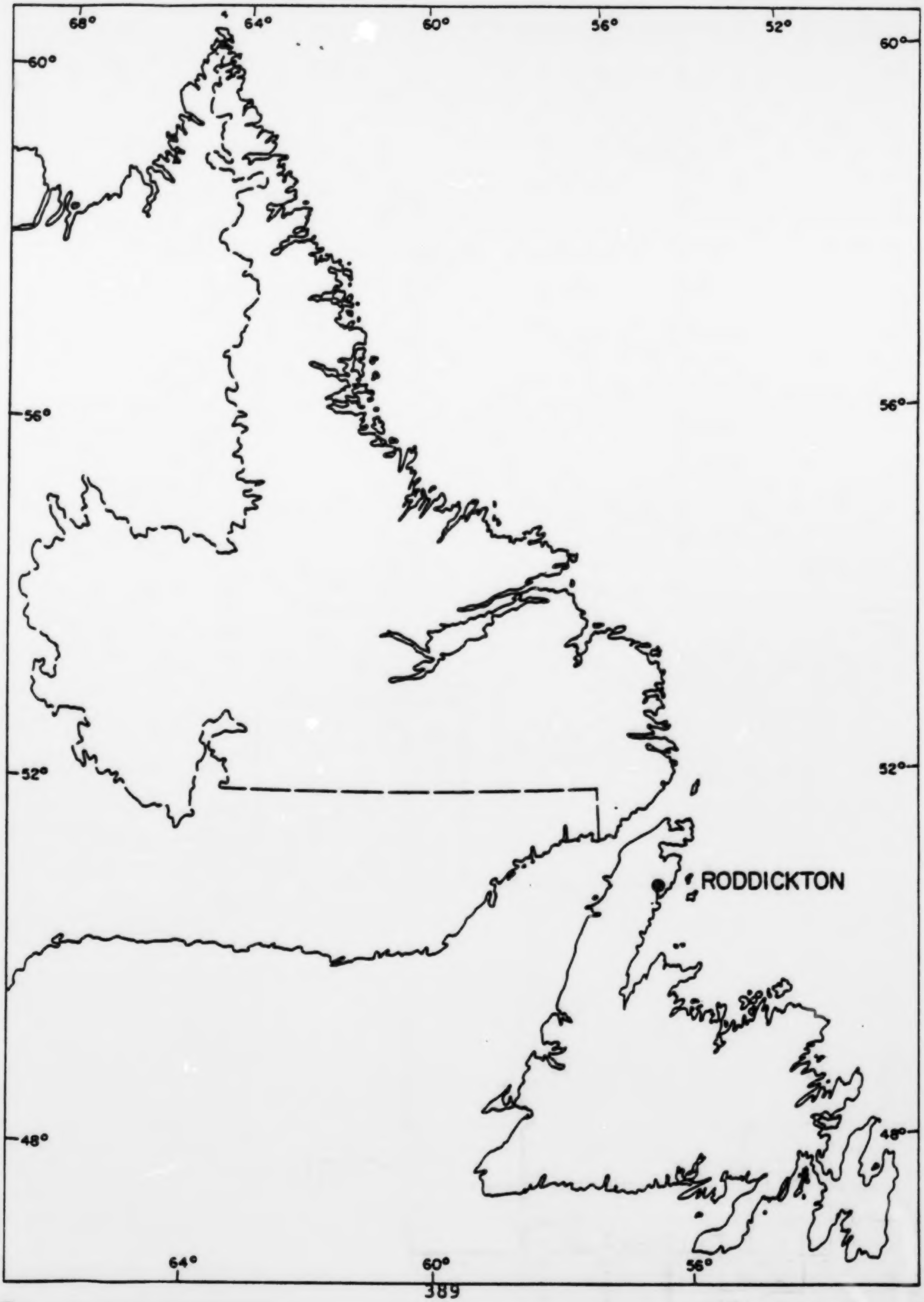
	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	2 880	10 549	1 542		7 910	22 881
Commercial	167					167
Industrial	29					29
Government	282					282
Street Lighting	64					64
TOTAL	3 422	10 549	1 542		7 910	23 423

5.4 REMOTE COMMUNITY ANALYSIS

Load Centre: Roddickton

Communities Serviced: Bide Arm, Conche, Englee, Roddickton

Comments: The diesel generating plant at Roddickton services the four communities referenced above. Profiles for each community will be presented separately, beginning with Bide Arm.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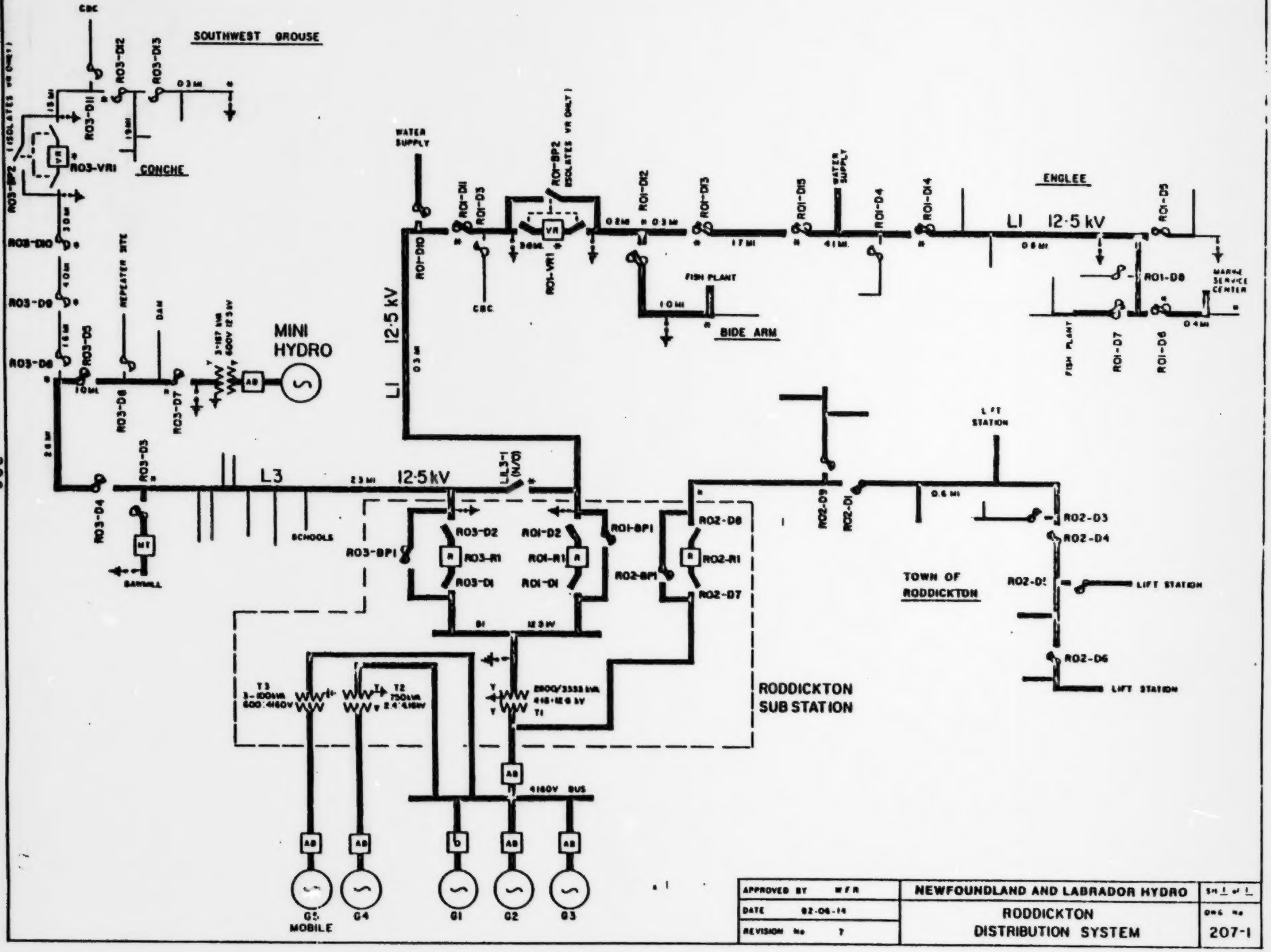

SOUTHWEST GROUSE
CONCHE
CBC
RO3-D11
RO3-D12
RO3-D13
0.3 MI
1.5 MI
1.9 MI
RO3-BP2 (ISOLATES VR ONLY)
RO3-VR1
VR
RO3-D10
3.0 MI
RO3-D9
4.0 MI
RO3-D8
1.6 MI
RO3-D5
1.0 MI
RO3-D6
REPEATER SITE
DAM
RO3-D7
3-167 kVA
600V 12.5kV
AB
MINI HYDRO
2.0 MI
RO3-D4
RO3-D3
MT
SAWMILL
L3
2.3 MI
12.5kV
SCHOOLS
L1L3-1 (N/O)
WATER SUPPLY
RO1-D10
0.3 MI
L1
12.5 kV
RO1-D11
RO1-D3
CBC
RO1-BP2 (ISOLATES VR ONLY)
RO1-VR1
3.0 MI
0.2 MI
0.3 MI
RO1-D12
FISH PLANT
1.0 MI
BIDE ARM
RO1-D13
1.7 MI
RO1-D15
WATER SUPPLY
4.1 MI
RO1-D4
RO1-D14
ENGLEE
L1 12.5 kV
0.8 MI
RO1-D5
RO1-D8
MARINE SERVICE CENTER
0.4 MI
FISH PLANT
RO1-D7
RO1-D6
RO3-D2
RO3-R1
RO3-D1
RO3-BP1
RO1-D2
RO1-R1
RO1-D1
RO1-BP1
RO2-D8
RO2-R1
RO2-D7
RO2-BP1
R
D1
12.5 kV
RODDICKTON SUB STATION
T3
3-100kVA
600:4160V
T2
750kVA
2.4:4.16kV
2800/3333 kVA
4.16:12.5 kV
T1
AB
4160V BUS
G5 MOBILE
G4
G1
G2
G3
RO2-D9
RO2-D1
0.6 MI
LIFT STATION
RO2-D3
RO2-D4
RO2-D5
LIFT STATION
RO2-D6
LIFT STATION
TOWN OF RODDICKTON

APPROVED BY W.F.R.	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 of 1
DATE 82-06-14	RODDICKTON DISTRIBUTION SYSTEM	DWG No 207-1
REVISION No 7		

5.4.1 REMOTE COMMUNITY ANALYSIS

Community Profile: Bide Arm

Status: Incorporated

Location: Lat: 50° 47' N

Long: 56° 07' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 339

Historic Population

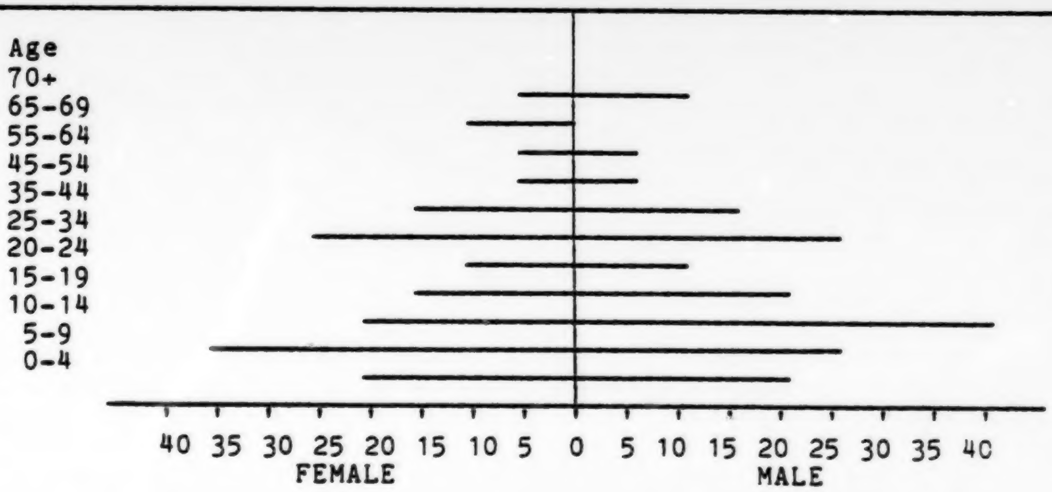
Year	Population	Increase	Growth %	Average Annual Growth %
1976	305			
1981	339	34	11.1	2.2

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

At 2% per annum: 1986 - 363 1991 - 407

Population Structure by Age and By Gender - 1981



No. of Females - 170 No. of Males - 169

Footnotes

There is a fairly young population, with over 75% under 35 years of age.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ____ Wells ____ Other ________

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks X Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes X No ____
Other: Yes ____ No X

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Roddickton

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: Uses Englee's

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ________

Other: ________________

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 6

Size: N/A Classrooms: N/A Teachers: 3

---

3. Residential

(1) Number of occupied private dwellings: 60
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 55
(5) Number of rented homes: 5
(6) Number of single detached homes: 60
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 5.4
(9) Dwellings heated by steam or hot water: 10
(10) Dwellings heated by hot air: 20
(11) Dwellings heated with stove or space heater: 20
(12) Dwellings heated by electric heat: 0
(13) Other: Wood 15

---

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	various signals
Telephone	Yes X	No	exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles			
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: Roddickton COMMUNITY: Bide Arm

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	471 622	68 191	22 730		1 087
Commercial	28 106				
Industrial	230 400				
Government	574				
Street Lighting	2 304				
TOTAL	733 006	68 191	22 730		1 087

1982 ENERGY PROFILE

LOAD CENTER: Roddickton COMMUNITY: Bide Arm

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 698	2 637	856		8 791	13 982
Commercial	101					101
Industrial	829					829
Government	2					2
Street Lighting	8					8
TOTAL	2 639	2 637	856		8 791	14 922

5.4.2 REMOTE COMMUNITY ANALYSIS

Community Profile: Conche

Status: Incorporated

Location: Lat: 50° 53' N

Long: 55° 54' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 464

Historic Population

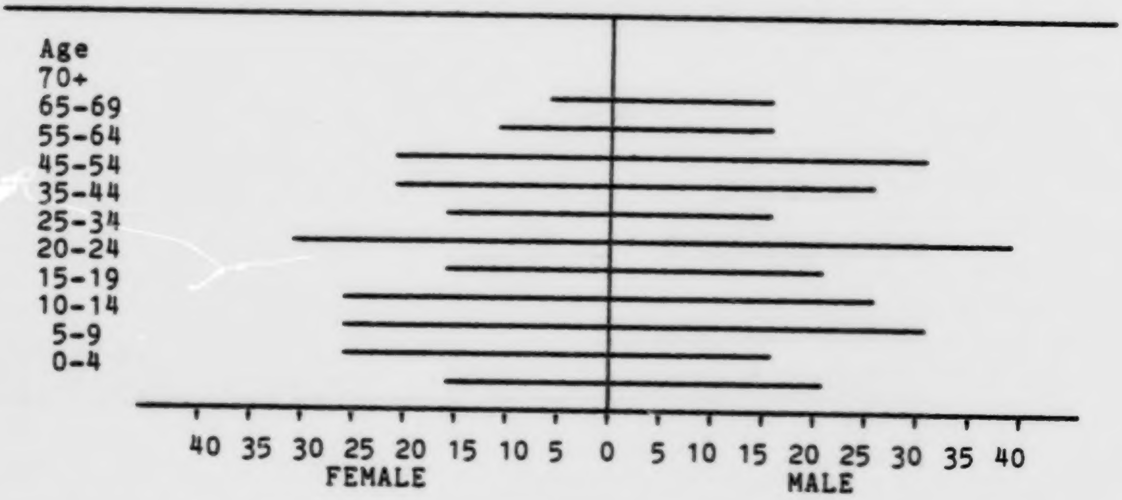
Year	Population	Increase	Growth %	Average Annual Growth %
1976	431			
1981	464	33	7.7	1.5

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

At 2% per annum: 1986 - 510 1991 - 557

Population Structure by Age and By Gender - 1981



No. of Females - 210 No. of Males - 254

Footnotes

There is a fairly young population, with over 60% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. **Water**

Source:

Lake ____ River ____ Wells X Other ____

Distribution:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes X No ____
Other: Yes ____ No X

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Roddickton

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No ____

Size of Facility: 334 M^2

Staff: Doctors: N/A Nurses: N/A

Other: total staff - 3.5

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 11

Size: N/A Classrooms: N/A Teachers: 8

---

3. Residential

(1) Number of occupied private dwellings: 110
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: 85, very good; 15 need minor repair; 15 need major repair
(4) Number of owned homes: 100
(5) Number of rented homes: 10
(6) Number of single detached homes: 105
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 4.2
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 75
(11) Dwellings heated with stove or space heater: 35
(12) Dwellings heated by electric heat: 0
(13) Other: wood 5

---

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

					Comments
Post Office	Yes	X	No		local
Television	Yes	X	No		CBC
Radio	Yes	X	No		various signals
Telephone	Yes	X	No		exchange service
High Frequency Radio	Yes		No	X	

Operated By: ______

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: Roddickton COMMUNITY: Conche

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	539 924	363 687	36 369		870
Commercial	30 922				
Industrial					
Government	88 007				
Street Lighting	8 712				
TOTAL	667 565	363 687	36 369		870

1982 ENERGY PROFILE

LOAD CENTER: Roddickton COMMUNITY: Conche

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 944	14 066	1 370		7 036	24 416
Commercial	111					111
Industrial						
Government	317					317
Street Lighting	31					31
TOTAL	2 403	14 066	1 370		7 036	24 875

5.4.3 REMOTE COMMUNITY ANALYSIS

Community Profile: Englee

Status: Incorporated

Location: Lat: 50° 44' N

Long: 56° 06' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 998

Historic Population

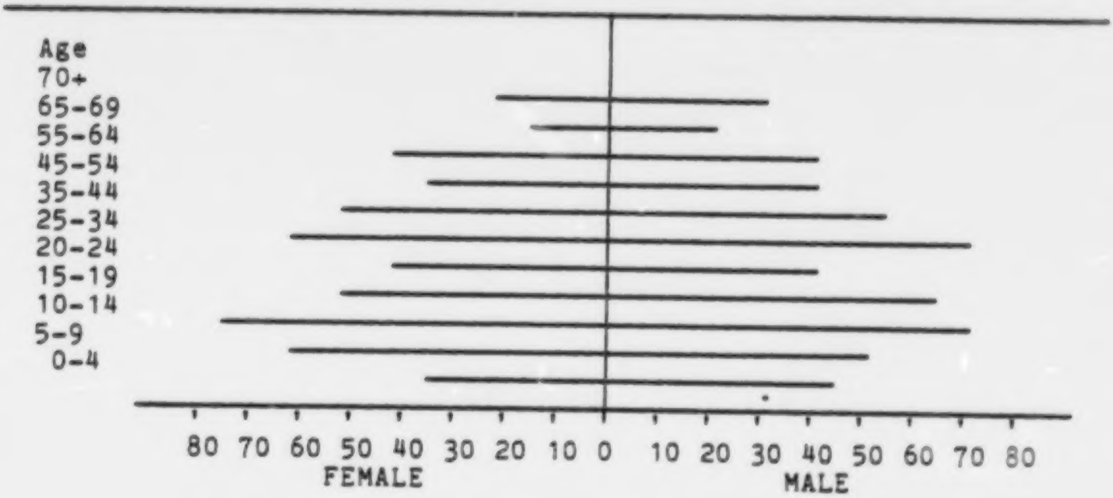
Year	Population	Increase	Growth %	Average Annual Growth %
1976	989			
1981	998	9	0.9	0.2

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

At 2% per annum: 1986 - 1098 1991 - 1198

Population Structure by Age and By Gender - 1981



No. of Females - 480 No. of Males - 518

Footnotes

There is a fairly young population, with 65% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ____ Wells ____ Other ____________

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination X
Fluoridation ____ None ____

2. Sewage

Collection System:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks X Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized:	Yes X	No ____
Landfill Site Utilized:	Yes X	No ____
Other:	Yes ____	No X

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Roddickton

---

5. Fire Protection Organized

Organized: Yes X No ____

Equipment: hydrants

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes 2 No ____

Grades: Kindergarten to Grade 8; Grades 9-11

Size: N/A Classrooms: N/A Teachers: 13/4

---

3. Residential

(1) Number of occupied private dwellings: 235
(2) Number of houses with sewer and water: 100%
(3) Housing Condition: 150, very good; 55 need minor repair; 30 need major repair
(4) Number of owned homes: 215
(5) Number of rented homes: 15
(6) Number of single detached homes: 215
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 4.2
(9) Dwellings heated by steam or hot water: 25
(10) Dwellings heated by hot air: 105
(11) Dwellings heated with stove or space heater: 90
(12) Dwellings heated by electric heat: 0
(13) Other: wood 10

---

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	various signals
Telephone	Yes X	No	exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: Roddickton COMMUNITY: Englee

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	1 386 085	354 595	27 277		3 261
Commercial	101 774				
Industrial	741 120				
Government	216 270				
Street Lighting	13 293				
TOTAL	2 458 542	354 595	27 277		3 261

1982 ENERGY PROFILE

LOAD CENTER: Roddickton COMMUNITY: Englee

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	4 990	13 714	1 028		26 374	46 106
Commercial	366					366
Industrial	2 668					2 668
Government	779					779
Street Lighting	48					48
TOTAL	8 851	13 714	1 028		26 374	49 967

5.4.4 REMOTE COMMUNITY ANALYSIS

Community Profile: Roddickton

Status: Incorporated

Location: Lat: 50° 52' N

Long: 56° 08' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. Roddickton is the second largest community on the Great Northern Peninsula. The mainstay of the economy is the lumber industry, and Roddickton has also developed as a service center for surrounding communities.

2. Demographics

1981 Population: 1,142

Historic Population

Year	Population	Increase	Growth %	Average Annual Growth %
1961	1,185			
1966	1,227	42	3.5	0.7
1971	1,239	12	9.8	1.9
1976	1,234	-5	-0.4	-0.08
1981	1,142	-92	-7.5	-1.5

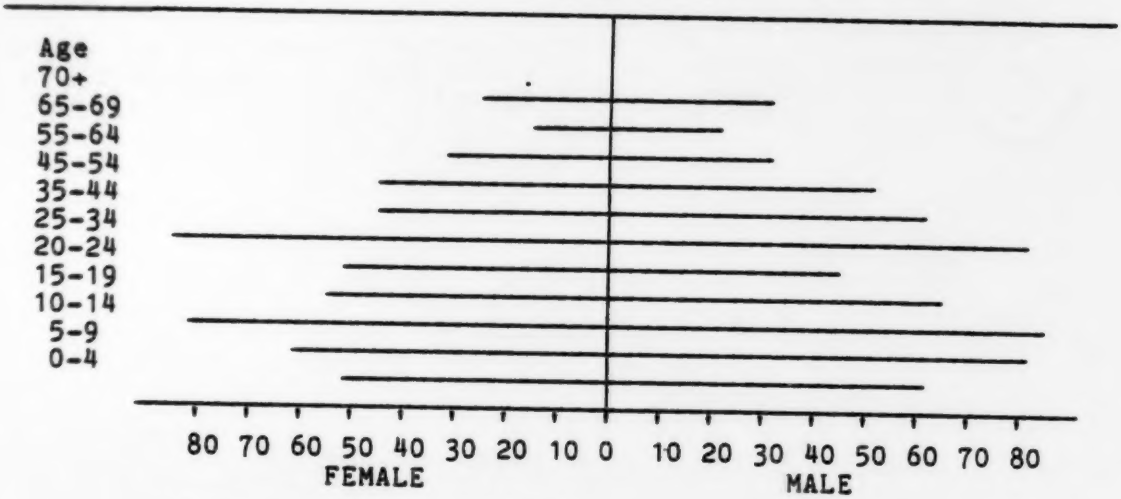
Source Note: Town of Roddickton Concept Municipal Plan, July 1976.

1981 Census of Canada.

Projected Future Population Growth:

At 2% per annum: 1986 - 1,256 1991 - 1,370

Population Structure by Age and By Gender - 1981



No. of Females - 540 No. of Males - 602

Footnotes

Approximately 70% of the total population is under the age of 35. This shows potential for future population growth.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ___ Wells ___ Other ___

Distribution:

Pipe X Truck ___ Individual Systems ___ None ___

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ___ Filtration ___ Chlorination X

Fluoridation ___ None ___

2. **Sewage**

Collection System:

Pipe X Truck ___ Individual Systems ___ None ___

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ___ Treatment Plant ___ None ___

---

3. **Solid Waste Disposal**

Garbage Collection Organized:	Yes	X	No	
Landfill Site Utilized:	Yes	X	No	
Other:	Yes		No	X

---

4. **Police Protection**

R.C.M.P.: Yes X No ___

Patrolled from: Roddickton

---

5. **Fire Protection Organized**

Organized: Yes X No ___

Equipment: fire truck, hydrants

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No ____

Size of Facility: 864 M^2

Staff: Doctors: N/A Nurses: N/A

Other: Total Staff of 17

---

2. Education

School located in community: Yes 4 No ____

Grades: Grades 7-11; Grades Kindergarten to 6; Grades 7-11; Grades Kindergarten to 6

Size: N/A Classrooms: N/A Teachers: 7/7/6/6

---

3. Residential

(1) Number of occupied private dwellings: 260
(2) Number of houses with sewer and water: 100%
(3) Housing Condition: '190, very good; 40 need minor repair; 25 need major repair
(4) Number of owned homes: 240
(5) Number of rented homes: 25
(6) Number of single detached homes: 240
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 4.3
(9) Dwellings heated by steam or hot water: 60
(10) Dwellings heated by hot air: 100
(11) Dwellings heated with stove or space heater: 75
(12) Dwellings heated by electric heat: 0
(13) Other: Wood 25

4. Community/Institutional/Commercial/Industrial Buildings

Church
Church
Fisheries Office
Municipal Office
General Store
General Store
General Store
General Store
General Store
General Store
Gas Station
Motel/Restaurant

Church
Community Hall
Forestry Office
CN Telecommunications Office
General Store
General Store
General Store
General Store
General Store
General Store
Gas Station
Restaurant

D. ECONOMIC ACTIVITIES

1. Forestry
2. Construction

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	various signals
Telephone	Yes X	No	exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	C.N.	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
1 - 450 kw Detroit with Kohler Generator
1 - 560 kw Lister with Tamper Generator
1 - 1000 kw Ruston with Tamper Generator
1 - 1000 kw Ruston with B.B.C. Generator
1 - 400 kw Ossberger with Kato Generator
1 - 450 kw Cat. with Cat. Generator

3. **Diesel Fuel Consumption:**

	1981	1982
Annual Fuel Use (litres)	1 698 635	1,898,684
Annual Fuel Cost	$441,645.00	$559,421.00
Cost per Litre	$0.26	$0.29
Cost Increase		12%

4. **Electricity Demand - Historical and Predicted (mwh):**

1980	7124	1985	5403
1981	5434	1986	5551
1982	5842	1987	5703
1983	5115	1988	5857
1984	5257		

5. **Peak Load Demand - Historical and Predicted (kw):**

1980	2028	1985	1929
1981	1696	1986	1968
1982	1824	1987	2007
1983	1854	1988	2047
1984	1891		

H. ASSESSMENT OF RESOURCES - Roddickton, Bide Arm, Conche, Englee

Small Scale Hydro Potential

There are five possible sites within approximately 7 km. of the nearest transmission line. The closest site is at Marble Brook, 1.4 km. from the nearest transmission line. it has a nominal capacity of 530 kw. through a head of approximately 46 M. Another site is located at Conche Harbour, 2.7 km. from the nearest transmission line. It has a nominal capacity of 320 kw. through a head of approximately 80 M. The next site is located at Northeast Brook, 3.7 km. from the nearest transmission line, with a nominal capacity of 445 kw. through a head of approximately 4 M. Two more distant sites are located at Hillier's Harbour, 5.6 km. from the nearest transmission line, with a nominal capacity of 590 kw. through a head of approximately 107 M., and at Mare Cove, 6.6 km. from the nearest transmission line, with a nominal capacity of 530 kw. through a head of approximately 140 M.

Wood Resources

The lands near Roddickton are capable of supporting a range of yearly growth ranging from less than 10 ft.^{3} per acre per year to about 70 ft.^{3} per acre per year. The majority of the productive forest surrounds Canada Bay to the east and northwest. This region has been an important logging area since the 1800's, and forest reserves have played a large role in the local economy.

Dominant species are balsam fir and black spruce, although other species such as birch are common. Timber rights are owned by the Crown in a 5 km. wide strip along the coastline. Bowater Newfoundland Limited and Abitibi-Price Pulp and Paper Company Limited own the inland areas.

Statistics Canada information indicates that the consumption of wood as a primary heating fuel for householders ranges substantially from a low of 31% in Conche to 72% in Bide Arm. The comparable statistics for Roddickton and Englee are 58% and 64%, respectively. The potential increased use of wood as an energy source requires further study.

Peat Resources

The Provincial Government's peat survey of 1981 shows that there are 200 hectares with $4\ M^3 \times 10^6$ of recoverable fuel peat in the Roddickton and Groais Island (about 20 km. east of Conche) areas. The closest deposits are along the main access road about 12 km. from the community. This source of energy warrants further investigation.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating - Heat Recovery

Information obtained from Newfoundland and Labrador Hydro indicates that there is a potential application for heat recovery for the town hall in Roddickton.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

The most promising small scale hydro development in the Roddickton area, located on Marble Brook, has been developed with funds contributed by the Department of Energy, Mines and Resources, and Newfoundland and Labrador Hydro under the Special Demonstration Program. The plant was constructed in the summer and fall of 1980 and went into operation in December of that year.

The plant develops 425 kw. of electric power and cost $1,225,000 to construct. The average unit energy cost is estimated to be $0.125 per kwh., assuming a 14% discount rate and a 30-year service life. This is roughly equivalent to the discounted levelized unit fuel cost for diesel generation.

Given the extensive forest and peat reserves in the area, there appears to be significant potential for further exploitation of these resources and it recommended that these options be examined more closely.

The data base on wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Roddickton COMMUNITY: Roddickton

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	1 881 800	495 523	22 730		3 478
Commercial	324 207				
Industrial	49 200				
Government	225 296				
Street Lighting	138 591				
TOTAL	2 619 094	495 523	22 730		3 478

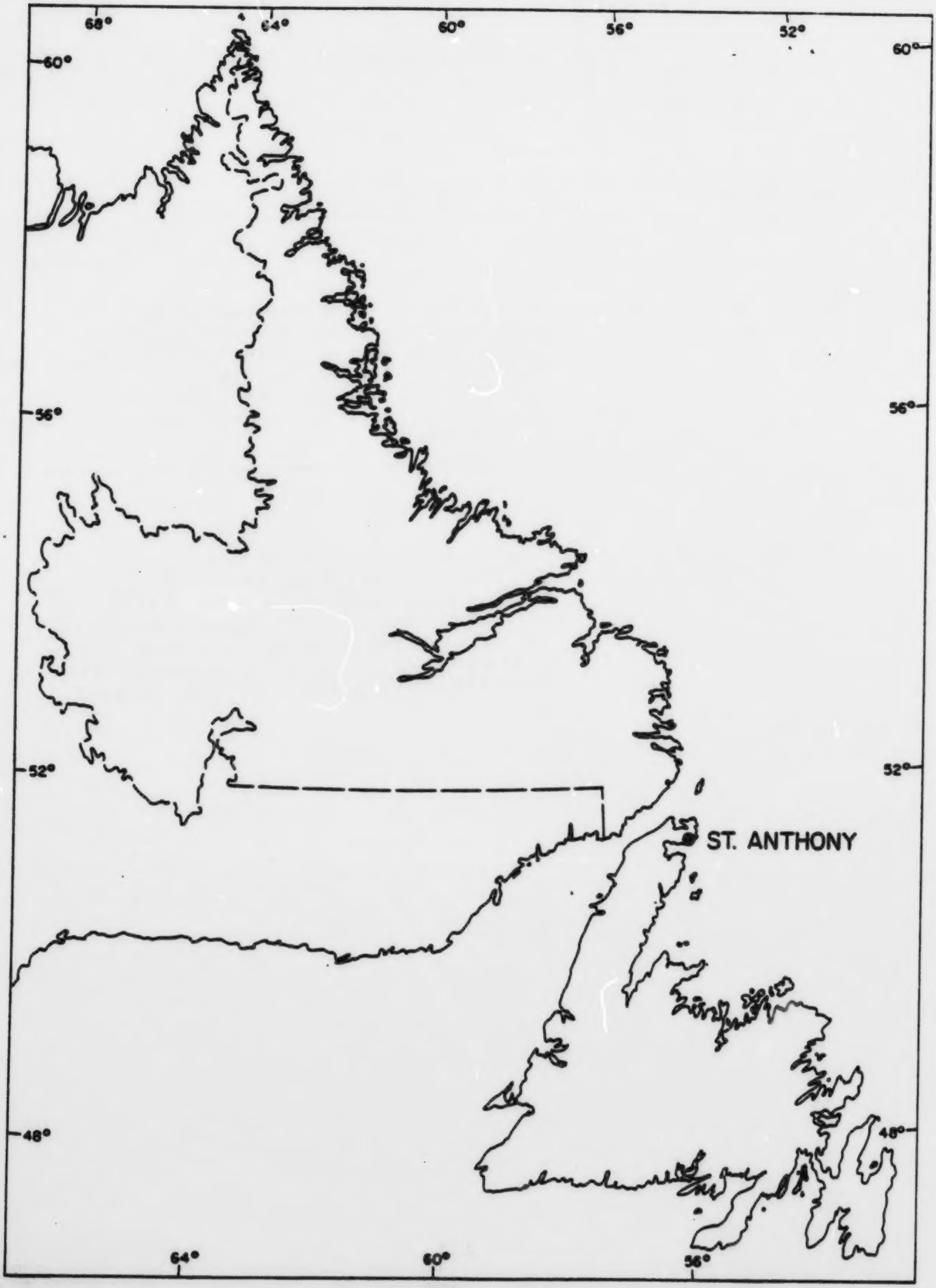
1982 ENERGY PROFILE

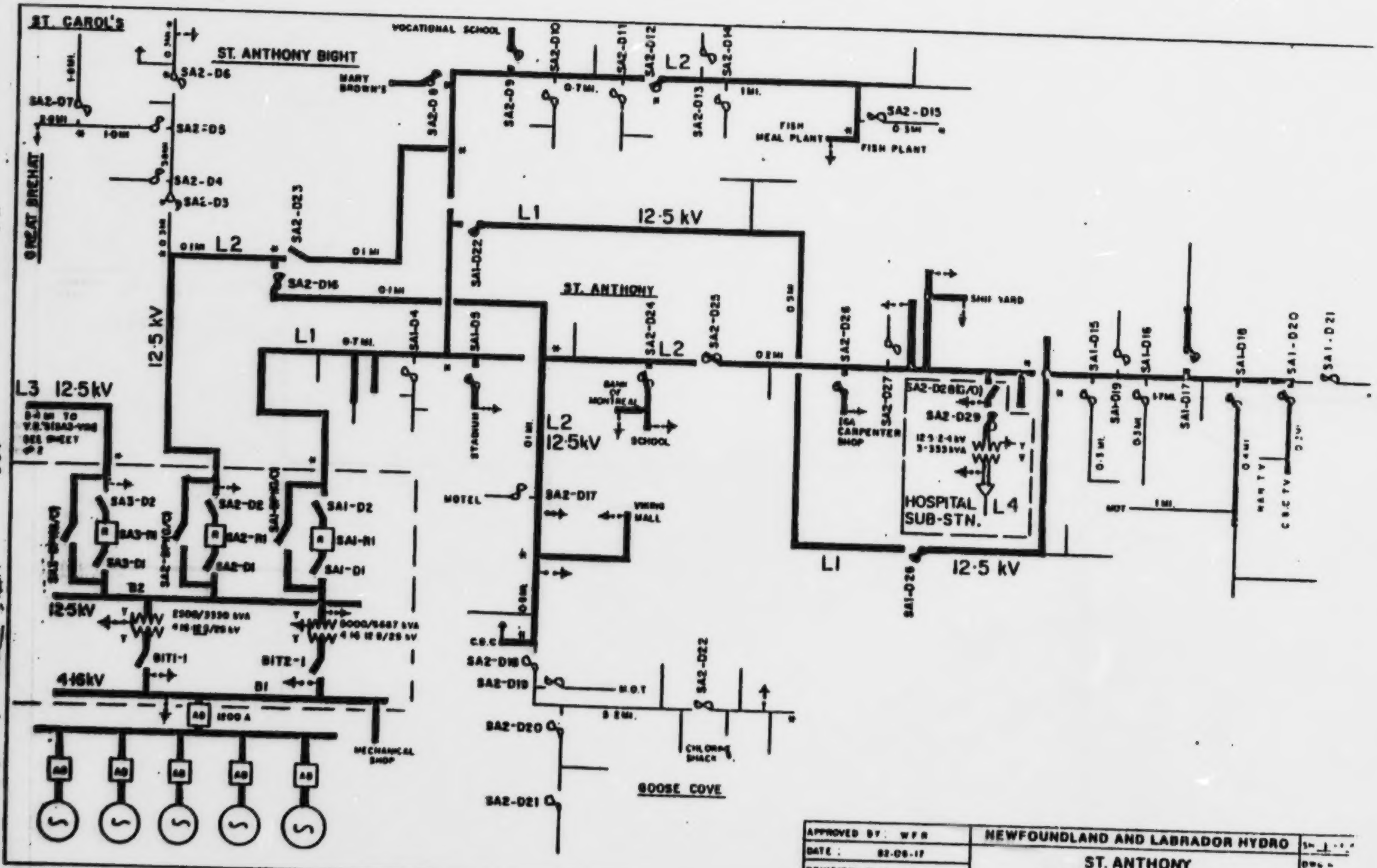
LOAD CENTER: Roddickton COMMUNITY: Roddickton

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	6 774	19 164	856		28 129	54 923
Commercial	1 167					1 167
Industrial	177					177
Government	811					811
Street Lighting	499					499
TOTAL	9 429	19 164	856		28 129	57 577

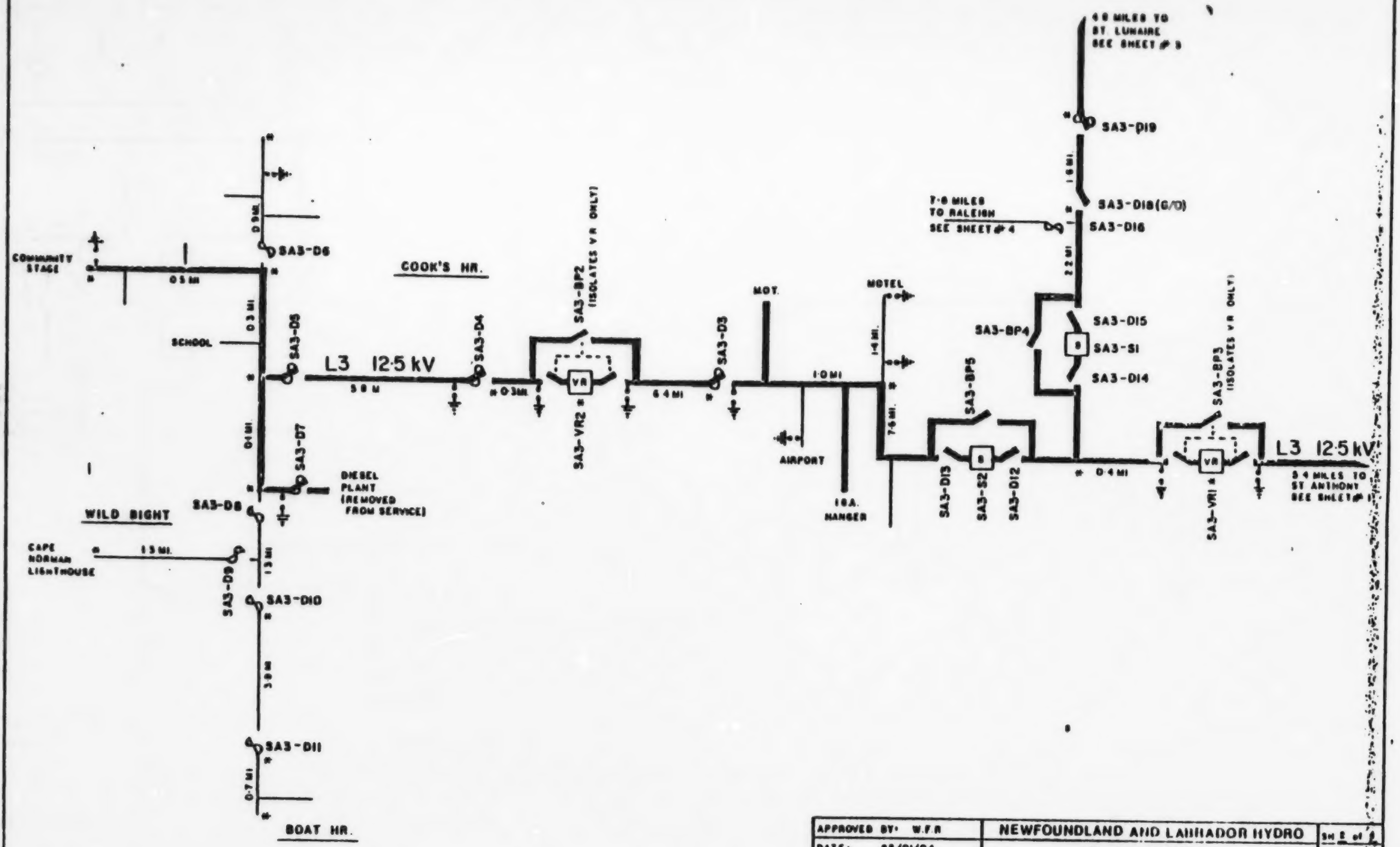
5.5 REMOTE COMMUNITY ANALYSIS

Load Centre:	St. Anthony
Communities Serviced:	Boat Harbour, Cape Onion-Ship Cove, Cook's Harbour, Goose Cove East, Great Brehat, Hay Cove, L'Anse aux Meadows, Noddy Bay, Quirpon, Raleigh, St. Anthony, St. Anthony Bight, St. Carrol's, St. Lunaire-Griquet, Wild Bight
Comments:	The diesel generating plant in St. Anthony provides electrical service to a large number of communities as indicated above. For those communities for which information is available profiles will be provided for each separately beginning with Boat Harbour.

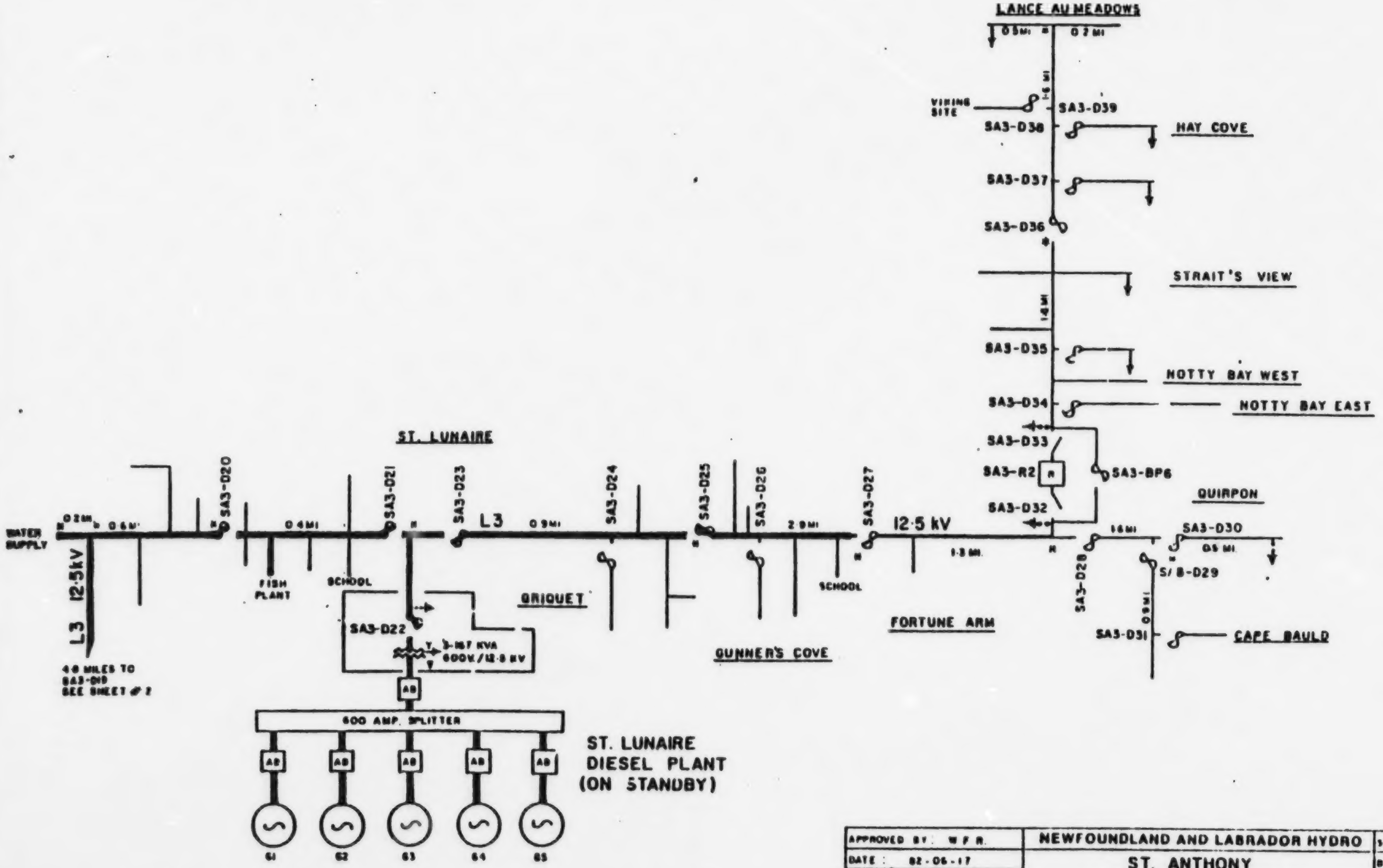

68°
64°
60°
56°
52°
60°
56°
52°
48°
64°
60°
56°
ST. ANTHONY


ST. CAROL'S
ST. ANTHONY BIGHT
GREAT BREHAT
VOCATIONAL SCHOOL
MARY BROWN'S
SA2-D3
SA2-D4
SA2-D5
SA2-D6
SA2-D7
SA2-D8
SA2-D9
SA2-D10
SA2-D11
SA2-D12
SA2-D13
SA2-D14
SA2-D15
SA2-D16
SA2-D17
SA2-D18
SA2-D19
SA2-D20
SA2-D21
SA2-D22
SA2-D23
SA2-D24
SA2-D25
SA2-D26
SA2-D27
SA2-D28(G/O)
SA2-D29
SA1-D4
SA1-D5
SA1-D15
SA1-D16
SA1-D17
SA1-D18
SA1-D19
SA1-D20
SA1-D21
SA1-D22
SA1-D28
FISH MEAL PLANT
FISH PLANT
L1
L2
L3
L4
12.5 kV
4.16kV
ST. ANTHONY
STADIUM
BANK OF MONTREAL
SCHOOL
MOTEL
VIKING MALL
C.B.C
IGA CARPENTER SHOP
SHIP YARD
HOSPITAL SUB-STN.
12.5-2.4 kV 3-333 kVA
NAN TV
C.B.C TV
MOT
GOOSE COVE
CHLORINE SHACK
MECHANICAL SHOP
N.O.T
SA3-D1
SA3-D2
SA3-R1
SA2-D1
SA2-D2
SA2-R1
SA1-D1
SA1-D2
SA1-R1
B1
B2
B1T1-1
B1T2-1
1200 A
0.7 MI.
1 MI.
0.1 MI
0.2 MI
0.3 MI

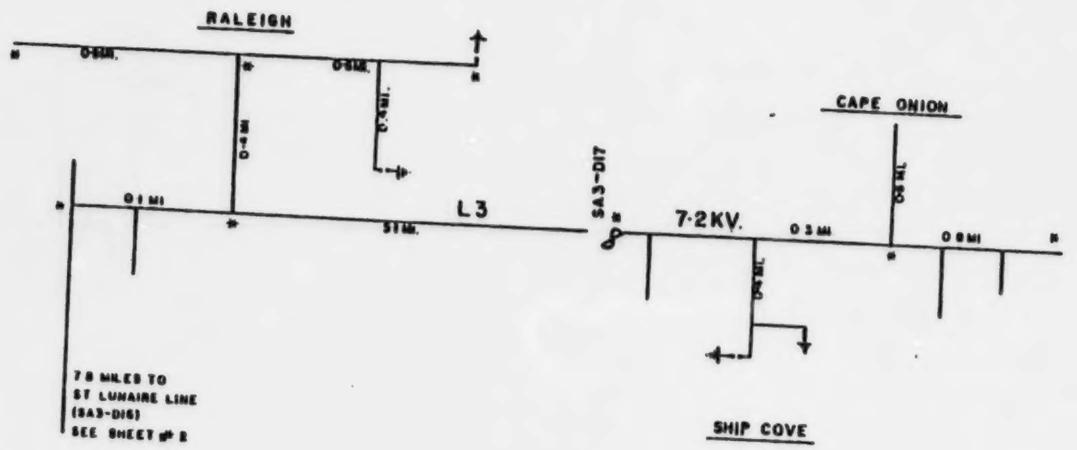
APPROVED BY: WFR	NEWFOUNDLAND AND LABRADOR HYDRO	SH. 1
DATE: 82-06-17	ST. ANTHONY DISTRIBUTION SYSTEM	DWG. No.
REVISION No.: 10		301-1


COMMUNITY STAGE
0.5 MI
SA3-D6
0.3 MI
COOK'S HR.
0.3 MI
SCHOOL
SA3-D5
L3 12.5 kV
5.8 M
SA3-D4
0.3 MI
SA3-BP2 (ISOLATES V.R. ONLY)
VR
SA3-VR2
6.4 MI
SA3-D3
MOT.
1.0 MI
AIRPORT
10A. HANGER
MOTEL
1.4 MI.
7.6 MI.
0.1 MI
SA3-D7
DIESEL PLANT (REMOVED FROM SERVICE)
WILD BIGHT
SA3-D8
CAPE NORMAN LIGHTHOUSE
1.5 MI.
1.3 MI
SA3-D9
SA3-D10
3.8 MI
SA3-D11
0.7 MI
BOAT HR.
4.8 MILES TO ST. LUNAIRE SEE SHEET # 3
SA3-D19
1.6 MI
SA3-D18(G/O)
7.8 MILES TO RALEIGH SEE SHEET # 4
SA3-D16
2.2 MI
SA3-BP4
SA3-D15
SA3-S1
SA3-D14
SA3-BP5
SA3-D13
SA3-S2
SA3-D12
0.4 MI
SA3-BP3 (ISOLATES V.R. ONLY)
SA3-VR1
L3 12.5 kV
3.4 MILES TO ST ANTHONY SEE SHEET # 1

APPROVED BY: W.F.R	NEWFOUNDLAND AND LABRADOR HYDRO	SH 2 of
DATE: 82/01/04	ST. ANTHONY DISTRIBUTION SYSTEM	DWG No
REVISION No. 8		301-8


LANCE AU MEADOWS
0.5 MI
0.2 MI
1.6 MI
VIKING SITE
SA3-D39
SA3-D38
HAY COVE
SA3-D37
SA3-D36
STRAIT'S VIEW
1.4 MI
SA3-D35
NOTTY BAY WEST
SA3-D34
NOTTY BAY EAST
SA3-D33
SA3-R2
R
SA3-BP6
SA3-D32
QUIRPON
SA3-D30
0.5 MI
1.6 MI
SA3-D28
S/B-D29
0.9 MI
SA3-D31
CAPE BAULD
WATER SUPPLY
0.2 MI
0.6 MI
12.5kV
L3
4.0 MILES TO SA3-D10 SEE SHEET # 2
SA3-D20
0.4 MI
FISH PLANT
SCHOOL
ST. LUNAIRE
SA3-D21
SA3-D23
L3
0.9 MI
SA3-D24
GRIQUET
SA3-D22
3-167 KVA 600V/12.5 KV
AB
600 AMP. SPLITTER
G1
G2
G3
G4
G5
ST. LUNAIRE DIESEL PLANT (ON STANDBY)
SA3-D25
SA3-D26
2.9 MI
SCHOOL
GUNNER'S COVE
SA3-D27
12.5 kV
1.3 MI
FORTUNE ARM

APPROVED BY: W.F.R.	NEWFOUNDLAND AND LABRADOR HYDRO	SH 3 OF 4
DATE: 82-06-17	ST. ANTHONY DISTRIBUTION SYSTEM	DWG No.
REVISION No: 7		301-3


RALEIGH
0·8 MI.
0·8 MI.
0·4 MI
0·4 MI.
0·1 MI
L3
5 MI.
SA3-D17
7·2KV.
0·3 MI
0·5 MI.
0·8 MI
0·4 MI.
CAPE ONION
SHIP COVE
7·8 MILES TO
ST LUNAIRE LINE
(SA3-D16)
SEE SHEET # 2

APPROVED BY : W.F.R.	NEWFOUNDLAND AND LABRADOR HYDRO		SH 4 of 4
DATE : 82/01/05	ST. ANTHONY DISTRIBUTION SYSTEM		DWG No 301-4
REVISION No.: 3			

5.5.1 REMOTE COMMUNITY ANALYSIS

Community Profile: Boat Harbour

Status: Unincorporated

Location: Lat: $51^{\circ}\ 35'$ N

Long: $56^{\circ}\ 00'$ W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

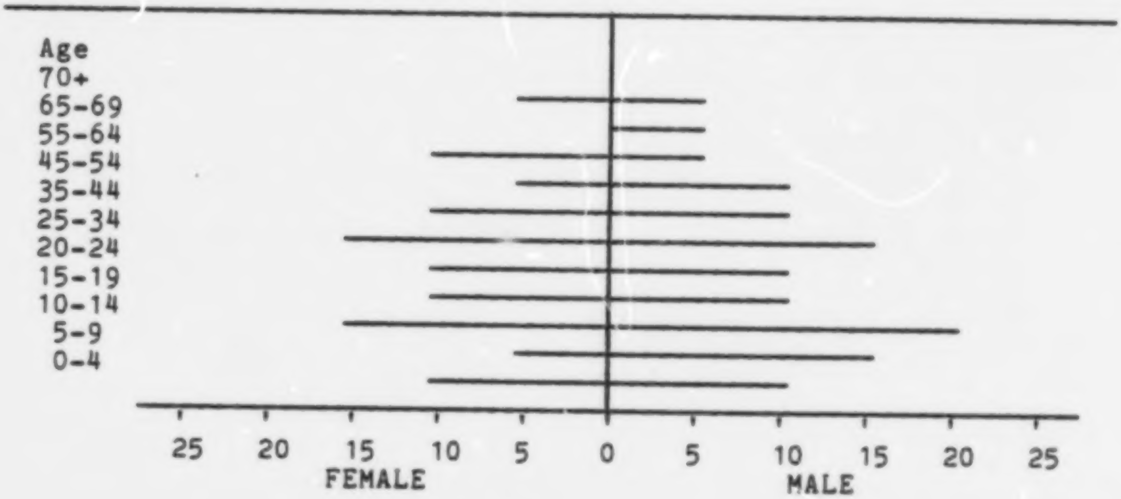
2. Demographics

1981 Population: 211

Projected Future Population Growth:

At 2% per annum: 1986 - 232 1991 - 253

Population Structure by Age and By Gender - 1981



No. of Females - 95 No. of Males - 116

Footnotes

There is a fairly young population, with 69% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells __X__ Other __________

Distribution:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__ Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____

Fluoridation ____ None __X__

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon __X__ Septic Tanks __X__ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized:	Yes ____	No __X__
Landfill Site Utilized:	Yes __X__	No ____
Other:	Yes ____	No __X__

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: St. Anthony

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ________

Other: ________________

---

2. Education

School located in community: Yes ____ No X

Grades: __________

Size: ____ Classrooms: ____ Teachers: ____

---

3. Residential

(1) Number of occupied private dwellings: 47
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 47
(5) Number of rented homes: 0
(6) Number of single detached homes: 45
(7) Number of single attached homes: 2
(8) Average number of persons per private household: 4.4
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

					Comments
Post Office	Yes		No	X	Uses Cook's Harbour
Television	Yes	X	No		CBC
Radio	Yes	X	No		Various signals
Telephone	Yes	X	No		Exchange service
High Frequency Radio	Yes		No	X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: Boat Harbour

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOO (tonnes
Residential	167 389	143 882	11 792		152
Commercial	5 573				
Industrial					
Government	5 573				
Street Lighting					
TOTAL	178 535	143 882	11 792		152

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: Boat Harbour

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	603	5 565	444		1 230	7 842
Commercial	20					20
Industrial						
Government	20					20
Street Lighting						
TOTAL	643	5 565	444		1 230	7 882

5.5.2 REMOTE COMMUNITY ANALYSIS

Community Profile: Cape Onion - Ship Cove

Status: Unincorporated

Location: Lat: 51° 36' N
Long: 55° 38' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

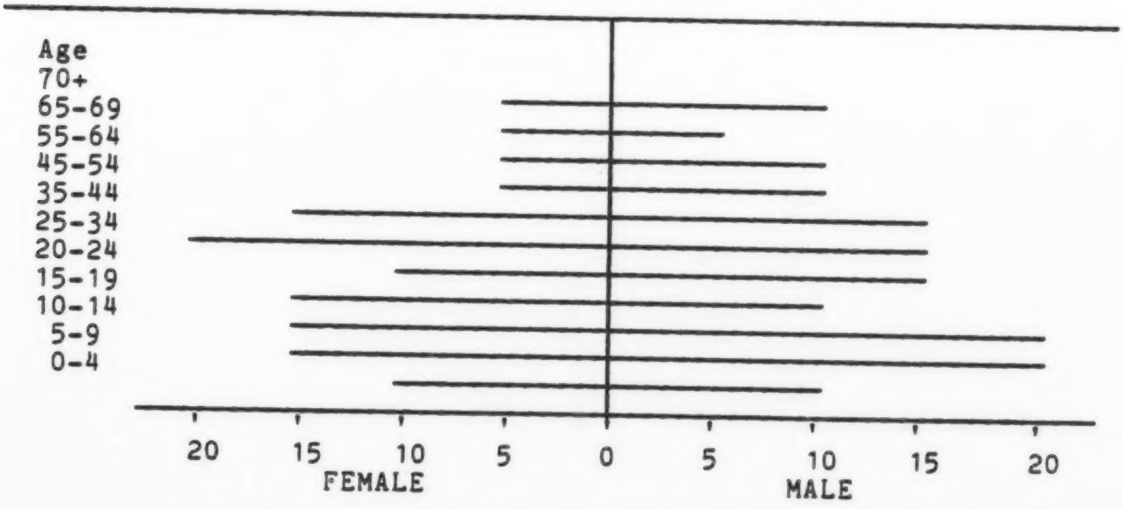
2. Demographics

1981 Population: 279

Projected Future Population Growth:

At 2% per annum: 1986 - 307 1991 - 335

Population Structure by Age and By Gender - 1981



No. of Females - 130 No. of Males - 149

Footnotes

There is a fairly young population, with 70% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells __X__ Other ____________

Distribution:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__ Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None __X__

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon __X__ Septic Tanks __X__ Treatment Plant ____ None ___

---

3. Solid Waste Disposal

Garbage Collection Organized:	Yes __X__	No ____
Landfill Site Utilized:	Yes __X__	No ____
Other:	Yes ____	No __X__

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: St. Anthony

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes ____ No X

Grades: ____

Size: ____ Classrooms: ____ Teachers: ____

---

3. Residential

(1) Number of occupied private dwellings: 60
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 60
(5) Number of rented homes: 0
(6) Number of single detached homes: 55
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 4.4
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes	No X	Uses Raleigh
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: Cape Onion - Ship Co

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWO (tonnes
Residential	305 722	183 450	15 268		196
Commercial	10 352				
Industrial					
Government	10 352				
Street Lighting					
TOTAL	326 426	183 450	15 268		196

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: Cape Onion - Ship Co

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTA (GJ
Residential	1 101	7 096	575		1 585	10 35
Commercial	37					3
Industrial						
Government	37					37
Street Lighting						
TOTAL	1 175	7 096	575		1 585	10 431

5.5.3 REMOTE COMMUNITY ANALYSIS

Community Profile:	Cook's Harbour
Status:	Unincorporated
Location:	Lat: 51° 36' N
	Long: 55° 52' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 388

Historic Population

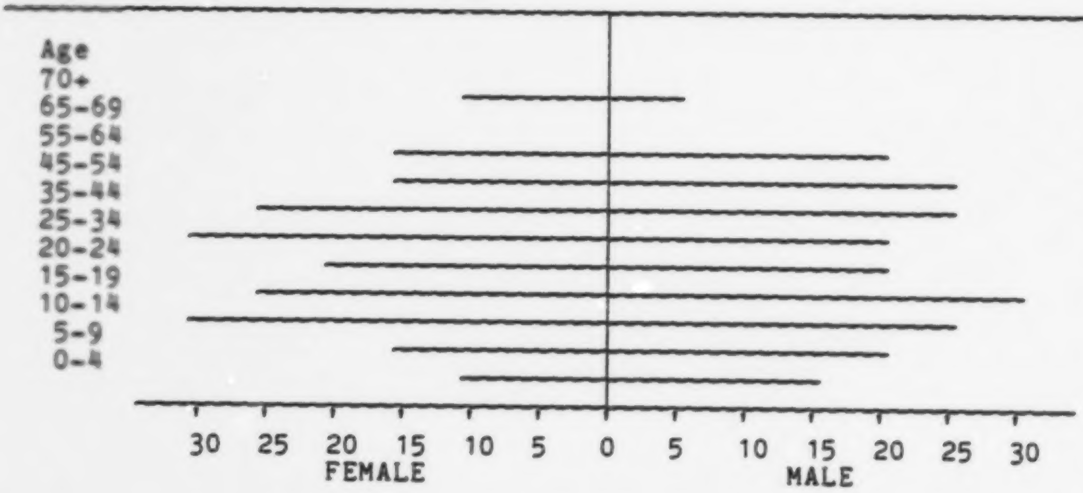
Year	Population	Increase	Growth %	Average Annual Growth %
1976	326			
1981	388	62	19.0	3.8

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

At 2% per annum: 1986 - 427 1991 - 466

Population Structure by Age and By Gender - 1981



No. of Females - 185 No. of Males - 203

Footnotes

There is a fairly young population, with 65% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ___ Wells ___ Other ___

Distribution:

Pipe X Truck ___ Individual Systems ___ None ___

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ___ Filtration ___ Chlorination X
Fluoridation ___ None ___

2. Sewage

Collection System:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks X Treatment Plant ____ None ____

3. Solid Waste Disposal

Garbage Collection Organized:	Yes	X	No	
Landfill Site Utilized:	Yes	X	No	
Other:	Yes		No	X

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: St. Anthony

5. Fire Protection Organized

Organized: Yes X No ____

Equipment: Hydrants

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No _X_

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ______

Other: ______________

---

2. Education

School located in community: Yes _X_ No ____

Grades: Kindergarten to Grade 12

Size: N/A Classrooms: N/A Teachers: 10

---

3. Residential

(1) Number of occupied private dwellings: 90
(2) Number of houses with sewer and water: 100%
(3) Housing Condition: 70, very good; 5 need minor repair; 5 need major repair
(4) Number of owned homes: 85
(5) Number of rented homes: 5
(6) Number of single detached homes: 86
(7) Number of single attached homes: 4
(8) Average number of persons per private household: 4.2
(9) Dwellings heated by steam or hot water: 10
(10) Dwellings heated by hot air: 65
(11) Dwellings heated with stove or space heater: 10
(12) Dwellings heated by electric heat: 0
(13) Other: 0

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: Cook's Harbour, Wild Bi

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWO (tonne
Residential	859 563	316 541	26 345		348
Commercial	205 999				
Industrial	35 680				
Government	458 513				
Street Lighting	7 533				
TOTAL	1 567 288	316 541	26 345		348

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: Cook's Harbour, Wild Bight

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	3 094	12 244	993		2 815	19 146
Commercial	742					742
Industrial	128					128
Government	1 651					1 651
Street Lighting	27					27
TOTAL	5 642	12 244	993		2 815	21 694

5.5.4 REMOTE COMMUNITY ANALYSIS

Community Profile: Goose Cove East

Status: Incorporated

Location: Lat: 51° 18' N

Long: 55° 38' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 368

Historic Population

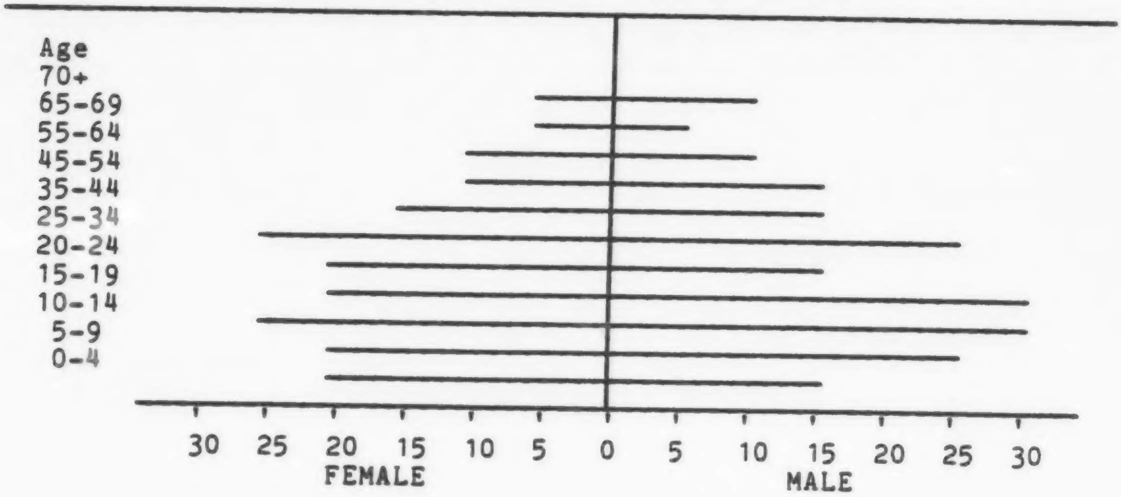
Year	Population	Increase	Growth %	Average Annual Growth %
1976	339			
1981	368	29	8.5	1.7

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

1. At 2% per annum: 1986 - 405 1991 - 442

Population Structure by Age and By Gender - 1981



No. of Females - 180   No. of Males - 188

Footnotes

There is a very young population, with 73% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ____ Wells ____ Other ____

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination X
Fluoridation ____ None ____

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon __X__ Septic Tanks __X__ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes __X__ No ____
Landfill Site Utilized: Yes ____ No __X__
Other: incinerator Yes __X__ No ____

---

4. Police Protection

R.C.M.P.: Yes __X__ No ____

Patrolled from: St. Anthony

---

5. Fire Protection Organized

Organized: Yes ____ No __X__

Equipment: Uses St. Anthony

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ____

Other: ____________

---

2. Education

School located in community: Yes ____ No X

Grades: ____________

Size: ____ Classrooms: ____ Teachers: ____

---

3. Residential

(1) Number of occupied private dwellings: 65
(2) Number of houses with sewer and water: 100%
(3) Housing Condition: 40, very good; 20 need minor repair; 5 need major repair
(4) Number of owned homes: 65
(5) Number of rented homes: 0
(6) Number of single detached homes: 65
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 5.4
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 45
(11) Dwellings heated with stove or space heater: 15
(12) Dwellings heated by electric heat: 0
(13) Other: Wood 5

---

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	
Telephone	Yes X	No X	
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: Goose Cove

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOC (tonnes
Residential	436 055	215 823	17 962		109
Commercial	178 396				
Industrial					
Government	178 396				
Street Lighting	7 128				
TOTAL	799 975	215 823	17 962		109

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: Goose Cove

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTA (GJ
Residential	1 570	8 348	677		882	11 47
Commercial	642					64
Industrial						
Government	642					64
Street Lighting	26					2
TOTAL	2 880	8 348	677		882	12 787

5.5.5 REMOTE COMMUNITY ANALYSIS

Community Profile:	Great Brehat
Status:	Unincorporated
Location:	Lat: 51° 26' N
	Long: 55° 30' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

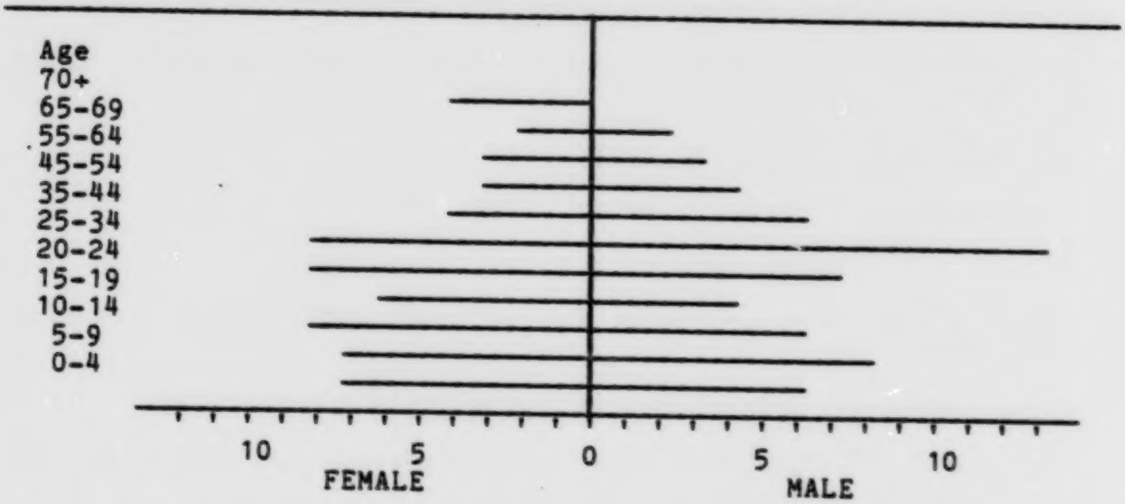
2. Demographics

1981 Population: 120

Projected Future Population Growth:

At 2% per annum: 1986 - 132 1991 - 144

Population Structure by Age and By Gender - 1981



No. of Females - 59 No. of Males - 61

Footnotes

There is a fairly young population, with 74% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake __X__ River _____ Wells _____ Other ______________

Distribution:

Pipe __X__ Truck _____ Individual Systems _____ None _____

Serving:

Government Buildings ____ Commercial Buildings ____ Residences __X_ Standpipes ___

Treatment:

Sedimentation _____ Filtration _____ Chlorination _____
Fluoridation _____ None __X__

---

2. Sewage

Collection System:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon __X_ Septic Tanks __X_ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes _____ No __X__
Landfill Site Utilized: Yes _____ No __X__
Other: Yes _____ No __X__

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: St. Anthony

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 4

Size: N/A Classrooms: N/A Teachers: 1

---

3. Residential

(1) Number of occupied private dwellings: 25
(2) Number of houses with sewer and water: 100%
(3) Housing Condition: N/A
(4) Number of owned homes: 25
(5) Number of rented homes: 0
(6) Number of single detached homes: 24
(7) Number of single attached homes: 1
(8) Average number of persons per private household: 4.9
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

5.5.6 REMOTE COMMUNITY ANALYSIS

Community Profile:	Hay Cove
Status:	Unincorporated
Location:	Lat: 51° 35' N
	Long: 55° 29' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

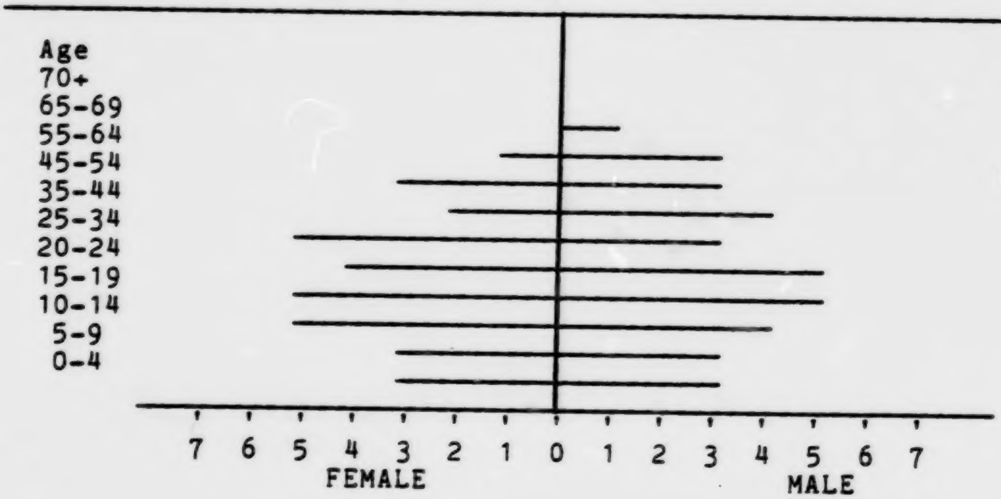
2. Demographics

1981 Population: 69

Projected Future Population Growth:

At 2% per annum: 1986 - 76 1991 - 83

Population Structure by Age and By Gender - 1981



No. of Females - 32 No. of Males - 37

Footnotes

There is a fairly young population: 74% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake _____ River _____ Wells __X__ Other ______________

Distribution:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__ Standpipes ___

Treatment:

Sedimentation _____ Filtration _____ Chlorination _____
Fluoridation _____ None __X__

---

2. Sewage

Collection System:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon __X__ Septic Tanks __X__ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes __X__ No _____
Landfill Site Utilized: Yes __X__ No _____
Other: Yes _____ No __X__

4. Police Protection

R.C.M.P.: Yes X No ____.

Patrolled from: St. Anthony

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: Uses L'Anse aux Meadows

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ________

Other: ____________________

---

2. Education

School located in community: Yes ____ No X

Grades: __________

Size: ____ Classrooms: ____ Teachers: ____

3. Residential

(1) Number of occupied private dwellings: 15
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 15
(5) Number of rented homes: 0
(6) Number of single detached homes: 14
(7) Number of single attached homes: 1
(8) Average number of persons per private household: 4.7
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other:

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes	No	Uses St Lunaire-Griquet
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

5.5.7 REMOTE COMMUNITY ANALYSIS

Community Profile:	L'Anse aux Meadows
Status:	Unincorporated
Location:	Lat: 51° 36' N
	Long: 55° 32' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

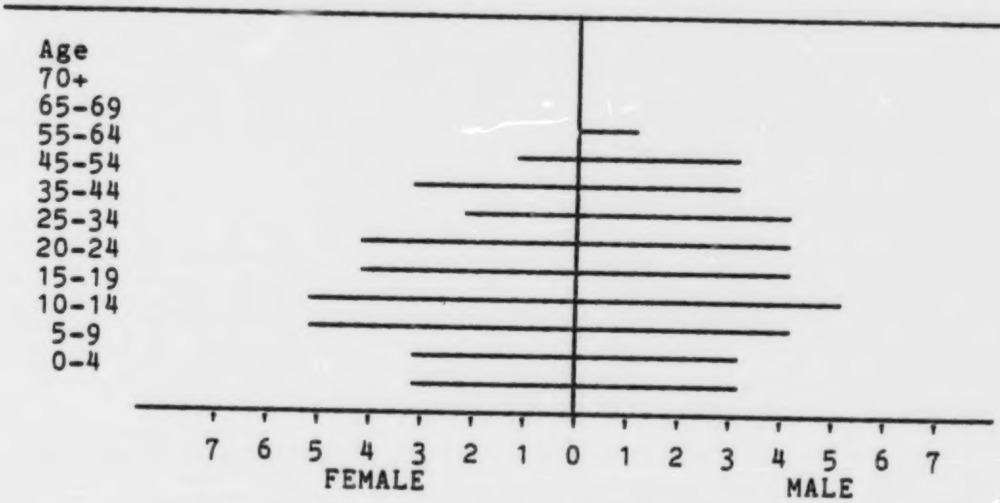
2. Demographics

1981 Population: 66

Projected Future Population Growth:

At 2% per annum: 1986 - 73 1991 - 79

Population Structure by Age and By Gender - 1981



No. of Females - 32 No. of Males - 34

Footnotes

There is a fairly young population: 73% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake _____ River _____ Wells __X__ Other _____________

Distribution:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__ Standpipes ___

Treatment:

Sedimentation _____ Filtration _____ Chlorination _____
Fluoridation _____ None __X__

2. Sewage

Collection System:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon __X__ Septic Tanks __X__ Treatment Plant ____ None ____

3. Solid Waste Disposal

Garbage Collection Organized: Yes __X__ No _____
Landfill Site Utilized: Yes __X__ No _____
Other: Yes _____ No __X__

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: St. Anthony

---

5. Fire Protection Organized

Organized: Yes X No ____

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes ____ No X

Grades: ____

Size: ____ Classrooms: ____ Teachers: ____

---

3. Residential

(1) Number of occupied private dwellings: 14
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 14
(5) Number of rented homes: 0
(6) Number of single detached homes: 13
(7) Number of single attached homes: 1
(8) Average number of persons per private household: 4.7
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other:

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

					Comments
Post Office	Yes		No	X	Uses St. Lunaire-Griquet
Television	Yes	X	No		CBC
Radio	Yes	X	No		Various signals
Telephone	Yes	X	No		Exchange service
High Frequency Radio	Yes		No	X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony

COMMUNITY: L'Anse aux Meadows, Hay Cove, Noddy Bay, Quirpon

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOC (tonnes
Residential	149 879	273 376	22 752		283
Commercial	40 799				
Industrial					
Government	21 017				
Street Lighting	594				
TOTAL	212 289	273 376	22 752		283

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: L'Anse aux Meadows, Hay Cove, Noddy Bay, Quirpon

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	540	10 574	857		2 286	14 257
Commercial	147					147
Industrial						
Government	76					76
Street Lighting	2					2
TOTAL	764	10 574	857		2 286	14 482

5.5.8 REMOTE COMMUNITY ANALYSIS

Community Profile: Noddy Bay

Status: Unincorporated

Location: Lat: 57° 35' N

Long: 55° 29' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

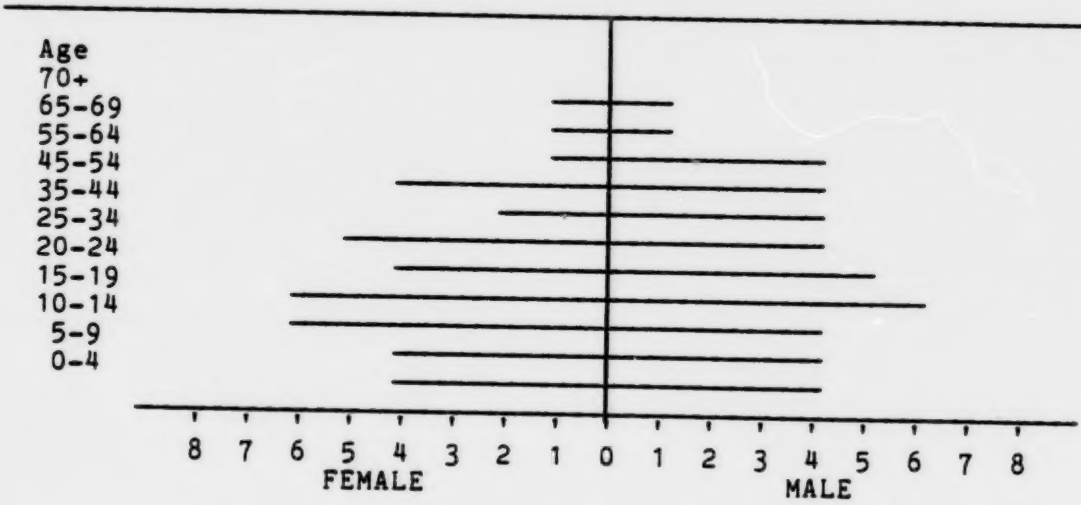
2. Demographics

1981 Population: 80

. Projected Future Population Growth:

At 2% per annum: 1986 - 88 1991 - 96

Population Structure by Age and By Gender - 1981



No. of Females - 38 No. of Males - 42

Footnotes

There is a fairly young population: 71% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells __X__ Other ____________

Distribution:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__ Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None __X__

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon __X__ Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes __X__ No ____
Landfill Site Utilized: Yes __X__ No ____
Other: Yes ____ No __X__

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: St. Anthony

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: Uses L'Anse aux Meadows

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes ____ No X

Grades: ____

Size: ____ Classrooms: ____ Teachers: ____

---

3. Residential

(1) Number of occupied private dwellings: 17
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 17
(5) Number of rented homes: 0
(6) Number of single detached homes: 17
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 4.7
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other:

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

					Comments
Post Office	Yes		No	X	Uses St. Lunaire-Griquet
Television	Yes	X	No		Various signals
Radio	Yes	X	No		Various signals
Telephone	Yes	X	No		Exchange service
High Frequency Radio	Yes		No	X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

5.5.9 REMOTE COMMUNITY ANALYSIS

Community Profile:	Quirpon
Status:	Unincorporated
Location:	Lat: 51° 35' N
	Long: 55° 26' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 209

Projected Future Population Growth:

At 2% per annum: 1986 - 230 1991 - 251

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells X Other ____

Distribution:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes X No ____
Other: Yes ____ No X

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: St. Anthony

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: Uses L'Anse aux Meadows

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ______

Other: ______________

---

2. Education

School located in community: Yes ____ No X

Grades: ________

Size: ____ Classrooms: ____ Teachers: ____

---

3. Residential

(1) Number of occupied private dwellings: 43

(2) Number of houses with sewer and water: N/A

(3) Housing Condition: N/A

(4) Number of owned homes: 39

(5) Number of rented homes: 4

(6) Number of single detached homes: 39

(7) Number of single attached homes: 4

(8) Average number of persons per private household: 4.2

(9) Dwellings heated by steam or hot water: N/A

(10) Dwellings heated by hot air: N/A

(11) Dwellings heated with stove or space heater: N/A

(12) Dwellings heated by electric heat: N/A

(13) Other: ______________ ____

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes	No	Uses St. Lunaire-Griquet
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

5.5.10 REMOTE COMMUNITY ANALYSIS

Community Profile: Raleigh

Status: Unincorporated

Location: Lat: 51° 34' N

Long: 55° 44' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 373

Historic Population

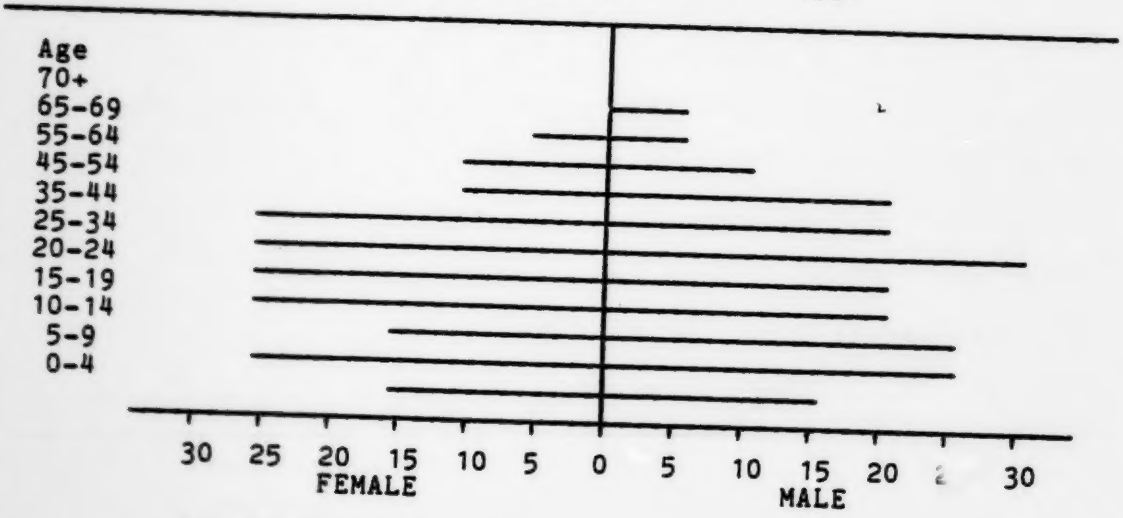
Year	Population	Increase	Growth %	Average Annual Growth %
1976	333			
1981	373	40	12.0	2.4

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

At 2% per annum: 1986 - 410 1991 - 448

Population Structure by Age and By Gender - 1981



No. of Females - 180 No. of Males - 193

Footnotes

There is a fairly young population, with 70% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells _X_ Other ____________

Distribution:

Pipe ____ Truck _X_ Individual Systems ____ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_ Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination _X_

Fluoridation ____ None ____

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_

Disposal:

Lagoon _X_ Septic Tanks ___ Treatment Plant ___ None ___

3. Solid Waste Disposal

Garbage Collection Organized: Yes __X__ No ____
Landfill Site Utilized: Yes __X__ No ____
Other: Yes ____ No __X__

---

4. Police Protection

R.C.M.P.: Yes __X__ No ____

Patrolled from: __St. Anthony__

---

5. Fire Protection Organized

Organized: Yes ____ No __X__

Equipment: __None__

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No __X__

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes __X__ No ____

Grades: __Kindergarten to Grade 12__

Size: __N/A__ Classrooms: __N/A__ Teachers: __5__

3. Residential

(1) Number of occupied private dwellings: 80
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: 80, very good; 15 need minor repair
(4) Number of owned homes: 80
(5) Number of rented homes: 5
(6) Number of single detached homes: 80
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 4.4
(9) Dwellings heated by steam or hot water: 55
(10) Dwellings heated by hot air: 0
(11) Dwellings heated with stove or space heater: 30
(12) Dwellings heated by electric heat: 0
(13) Other: 0

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: Raleigh

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOC (tonnes
Residential	503 655	244 600	20 357		261
Commercial	34 137				
Industrial					
Government	23 723				
Street Lighting	11 259				
TOTAL	572 774	244 600	20 357		261

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: Raleigh

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ
Residential	1 813	9 461	767		2 110	14 15
Commercial	123					12
Industrial						
Government	85					85
Street Lighting	41					41
TOTAL	2 062	9 461	767		2 110	14 400

5.5.11 REMOTE COMMUNITY ANALYSIS

Community Profile: St. Anthony

Status: Incorporated

Location: Lat: 51° 22' N

Long: 55° 35' W

Sources of Information:

Publications and Articles

Li, Peter, "The Municipal Plan of the Town of St. Anthony," Department of Municipal Affairs and Housing, November 1980.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. St. Anthony was named St. Anthony Haven in 1534 by Jacques Cartier. At that time, the area was already used as a fishing settlement by Basque and French fishermen. In the 1800's, fishermen from Dorset, England, visited frequently, and a permanent settlement was established after the Napoleonic War. The modern development of St. Anthony began with the arrival of Sir Wilfred Grenfell in 1982, when he located a hospital site for the Royal National Mission to Deep Sea Fishermen and established St. Anthony as a base for his medical operation. Today, St. Anthony is a service base for medical operations and is becoming increasingly industrialized as the fish processing industry grows.

2. Demographics

1981 Population: 3107

Historic Population

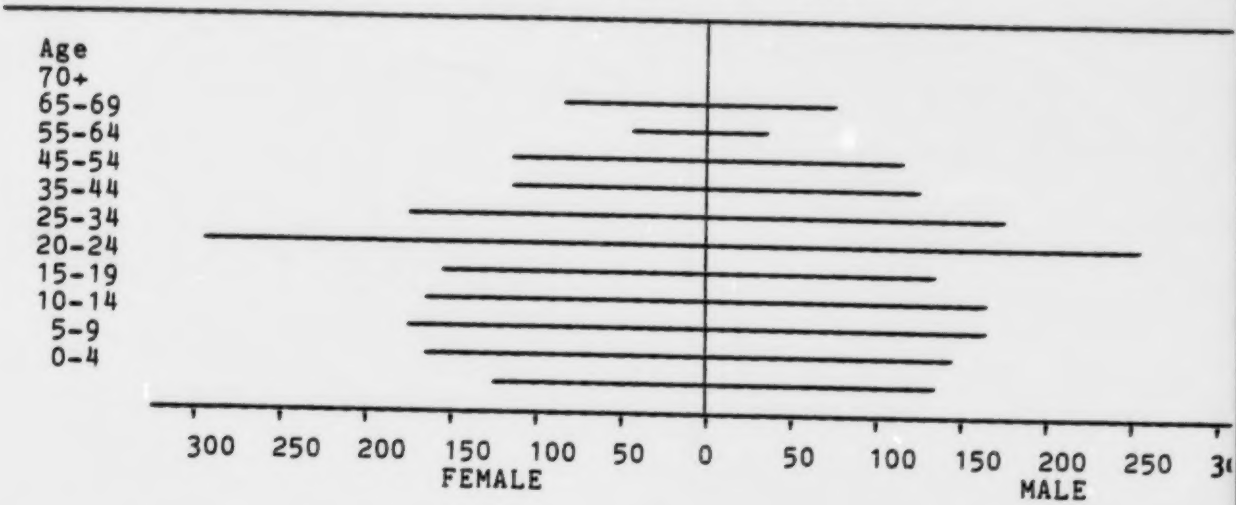
Year	Population	Increase	Growth %	Average Annual Growth %
1976	2987			
1981	3107	120	4.0	0.8

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

At 2% per annum: 1986 - 3418 1991 - 3728

Population Structure by Age and By Gender - 1981



No. of Females - 1605 No. of Males - 1502

Footnotes

Sixty-five percent of the total population is under the age of 35; therefore there is potential for sustained population growth.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ___ Wells ___ Other ___

Distribution:

Pipe X Truck ___ Individual Systems ___ None ___

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ___ Filtration ___ Chlorination X
Fluoridation ___ None ___

2. **Sewage**

Collection System:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. **Solid Waste Disposal**

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes ____ No X
Other: incinerator Yes X No ____

---

4. **Police Protection**

R.C.M.P.: Yes X No ____

Patrolled from: St. Anthony

---

5. **Fire Protection Organized**

Organized: Yes X No ____

Equipment: hydrants

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No ____

Size of Facility: 12,727.3 M^2

Staff: Doctors: ____ Nurses: ____

Other: Total Staff - 288

---

2. Education

School located in community: Yes 2 No ____

Grades: Kindergarten to Grade 6; Grades 7 - 11

Size: N/A Classrooms: N/A Teachers: 26/22

---

3. Residential

(1) Number of occupied private dwellings: 795
(2) Number of houses with sewer and water: All have sewer and water
(3) Housing Condition: 650, very good; 105 need minor repair; 30 need major repair
(4) Number of owned homes: 635
(5) Number of rented homes: 155
(6) Number of single detached homes: 620
(7) Number of single attached homes: 25
(8) Average number of persons per private household: 3.8
(9) Dwellings heated by steam or hot water: 245
(10) Dwellings heated by hot air: 420
(11) Dwellings heated with stove or space heater: 90
(12) Dwellings heated by electric heat: 25
(13) Other: Wood 15

4. Community/Institutional/Commercial/Industrial Buildings

Church
Stadium
Viking Mall
Viking Motel
Town Hall
Salting Plant
19 Variety Outlets

Vocational School
St. Anthony Motel
Church
Church
Fishery Products
Church
40 Retail Establishments

D. ECONOMIC ACTIVITIES

1. Fishery
2. Medical Care
3. Service Industries

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	various signals
Telephone	Yes X	No	exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Labrador Airways	Scheduled & Charter
Marine	CN Marine	Scheduled
Bus	Viking Express	Scheduled & Charter
Other	Not Applicable	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
4 - 1000 kw Ruston with Tamper Generators
2 - 2000 kw Ruston with G.E.C. Generators
1 - 30 kw Cat. with Cat. Generator

3. **Diesel Fuel Consumption:**

	1981	1982
Annual Fuel Use (litres)	5,318,402	6,077,943
Annual Fuel Cost	$1,369,467.00	$1,848,544.00
Cost per Litre	$0.26	$0.30
Cost Increase	--	15%

4. **Electricity Demand - Historical and Predicted (mwh):**

1980	15406	1985	25881
1981	18774	1986	27142
1982	21558	1987	28465
1983	22255	1988	29856
1984	24230		

5. **Peak Load Demand - Historical and Predicted (kw):**

1980	2994	1985	5398
1981	4160	1986	5668
1982	4480	1987	5351
1983	4750	1988	6249
1984	5064		

H. ASSESSMENT OF RESOURCES - St. Anthony Load Centre - All Communities

Small Scale Hydro Development

St. Anthony is the load center and location of a diesel generating plant which serves 15 communities on the Great Northern Peninsula from Goose Cove, 10 km. to the south, to Great Brehat, 10 km. to the northeast of St. Anthony. There are four possible sites within approximately 8 km. of the nearest transmission line.

The largest site is located on Ireland's Brook, 7 km. from the nearest transmission line. It has a nominal capacity of 1.04 mw. through a head of approximately 35 M. A closer site is located on Bartlett's River, 5.9 km. from the nearest transmission line. It has a nominal capacity of 685 kw. through a head of approximately 76 M.

The remaining two sites involve the less environmentally acceptable practice of diverting Bartlett's River at eastern Lord Pond in one instance into Parker River, and in the other into Frenchman's Pond. The former site is located 7.4 km. from the nearest transmission line and has a nominal capacity of 315 kw. through a head of approximately 37 M. The latter site has a nominal capacity of 380 kw. through a head of approximately 40 M and is located 1.3 km. from the nearest transmission line.

Wood Resources

About 80% of the lands of the tip of the Northern Peninsula have severe limitations which preclude the growth of commercial forests. These include: shallow, stony soils, bedrock, wet areas, low fertility, exposure, and toxic chemicals in the soil. About one-half of this area is either barrens or boglands.

The remaining 20% of lands have severe limitations to the growth of commercial forests, including exposure, rock and wet soils. These forests exist around the base of the White Hills and the east side of Pistolet Bay. These lands can support growths ranging from 11 to 30 $ft.^3$ per acre per year to 31 to 50 $ft.^3$ per acre per year. However, in recent years the standing forest has been decimated by forest fires and by heavy pressure from sawmill operators and local firewood consumers. The timber rights for forests north of Hare Bay are owned by the Crown. The dominant species in the limited forests available is black spruce.

The limited availability of fuelwwod is reflected in the Statistics Canada data base on the number of fuelwood consumers in the area. The number of householders using wood as a primary fuel ranges from a low of 7% in St. Anthony to a high of 29% in St. Lunaire-Griquet. With the exception of Goose Cove, where the number of householders using wood as a primary fuel is reported as 81%, the remaining communities serviced by the St. Anthony system have approximately 15% of householders using wood. The potential to increase the number of householders consuming wood in this area would appear to be limited but nonetheless requires further study.

Peat Resources

The Provincial Government's 1981 fuel peat inventory shows that there are approximately 700 hectares with about 7 M^3 X 10^6 available. Suitable bogs are found adjacent to or within a few kilometers of all the communities on the norther tip of the Northern Peninsula. This source of energy warrants further investigation.

Wind Energy Potential

The Atmospheric Environment Service of Environment Canada maintains mean wind speed records at three separate locations in St. Anthony. The nominal yearly energy production estimates for the three sites are 430 kwh., 458 kwh., and 690 kwh. per square meter of swept area.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

Small scale hydro development in the St. Anthony area appears to be feasible. The Bartlett's River site appears to be the most promising site and would have an estimated capital cost in the range of \$1.7 to \$2.3 million in 1983 dollars. It is estimated that energy could be produced with an Annual Equivalent Cost of approximately \$0.14 per kwh. This compares quite favourably with diesel generated electricity, which has an Annual Equivalent Cost of approximately \$0.25 per kwh.

The fact that the penetration of wood stoves in communities in the St. Anthony area is typically in the range of 15% or less agrees with the poor outlook for fuelwood as an energy source in this area.

Peat, on the other hand, warrants further investigation. There are suitable bogs found in close proximity to all communities in the St. Anthony area. The Provincial Government's fuel peat inventory shows that there are approximately 700 hectares of bog in the area with about 7 M3 X 10^6 of peat available. This is roughly the equivalent of 80 million gallons of Number 2 fuel oil. It is sufficient to meet the entire heating fuel needs of the St. Anthony area for years.

The data base on wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

We would conclude that a small scale hydro development is the most promising energy alternative for the St. Anthony area, with peat as an alternative warranting further investigation.

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: St. Anthony, St. Carrol

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOC (tonnes
Residential	5 257 583	2 611 460	217 346		1 261
Commercial	4 561 648	2 871 454	11 176		
Industrial	1 581 600				
Government	668 843	242 217	1 767		
Street Lighting	363 873				
TOTAL	12 433 547	5 725 131	230 289		1 261

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: St. Anthony, St. Carrol

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	18 927	101 011	8 190		10 199	138 327
Commercial	16 422	111 068	421			127 911
Industrial	5 694					5 694
Government	2 408	9 369	67			11 844
Street Lighting	1 310					1 310
TOTAL	44 761	221 448	8 678		10 199	285 086

5.5.12 REMOTE COMMUNITY ANALYSIS

Community Profile: St. Anthony Bight

Status: Unincorporated

Location: Lat: 51° 23' N

Long: 55° 33' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

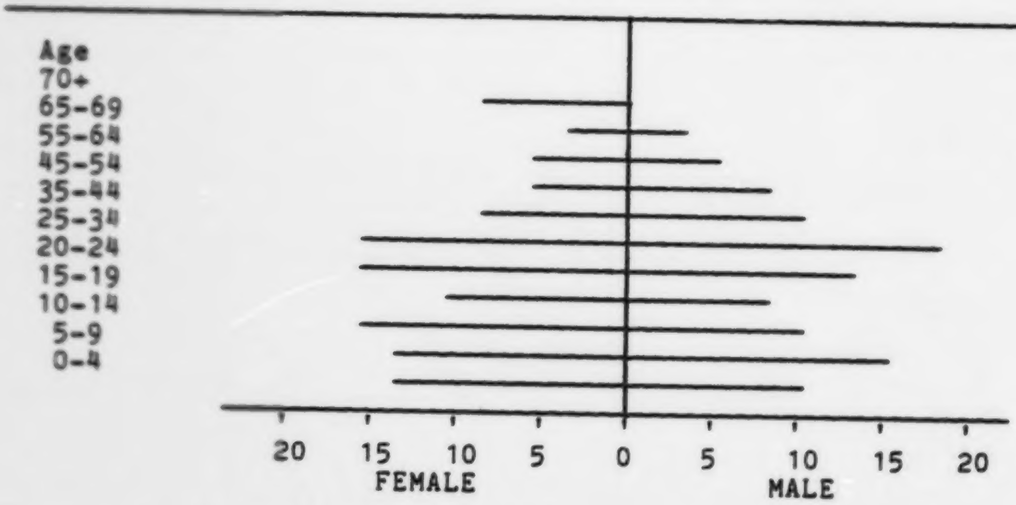
2. Demographics

1981 Population: 214

Projected Future Population Growth:

At 2% per annum: 1986 - 235 1991 - 257

Population Structure by Age and By Gender - 1981



No. of Females - 110 No. of Males - 104

Footnotes

There is a fairly young population: 74% are under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ____ Wells ____ Other ____________

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes ____ No X
Other: incinerator Yes X No ____

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: St. Anthony

---

5. Fire Protection Organized

Organized: Yes X No ____

Equipment: Uses St. Anthony

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes ____ No X

Grades: ____

Size: ____ Classrooms: ____ Teachers: ____

3. Residential

(1) Number of occupied private dwellings: 45
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 45
(5) Number of rented homes: 0
(6) Number of single detached homes: 43
(7) Number of single attached homes: 2
(8) Average number of persons per private household: 4.9
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other:

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes	No	Uses St. Anthony
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: St. Anthony Bight, Great Brehat

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOC (tonnes
Residential	547 762	251 794	20 956		239
Commercial	2 981				
Industrial					
Government	2 981				
Street Lighting	594				
TOTAL	554 318	251 794	20 956		239

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: St. Anthony Bight, Great Brehat

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 972	9 739	790		1 934	14 435
Commercial	11					11
Industrial						
Government	11					11
Street Lighting	2					2
TOTAL	1 996	9 739	790		1 934	14 459

5.5.13 REMOTE COMMUNITY ANALYSIS

Community Profile:	St. Carrol's
Status:	Unincorporated
Location:	Lat: 51° 23' N
	Long: 55° 30' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

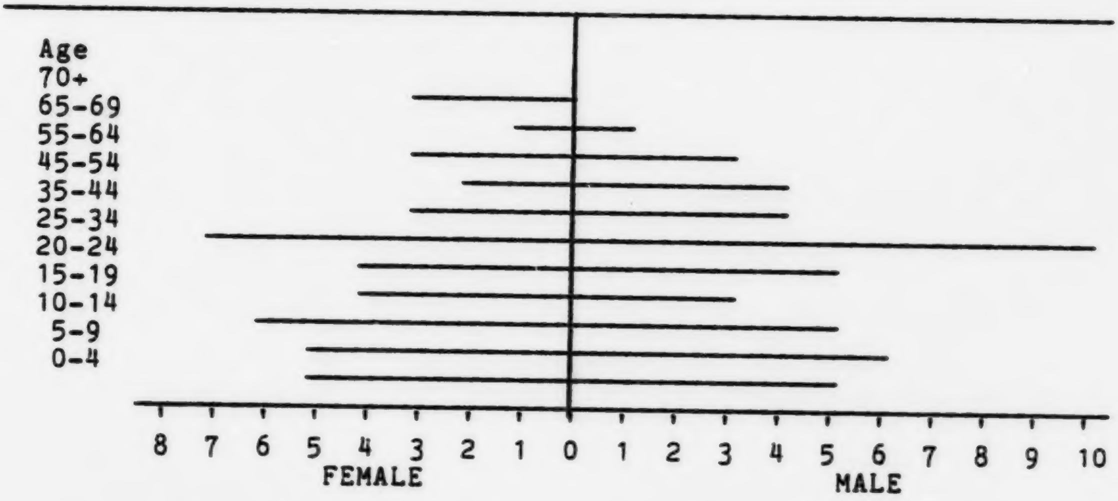
2. Demographics

1981 Population: 92

Projected Future Population Growth:

At 2% per annum: 1986 - 101 1991 - 110

Population Structure by Age and By Gender - 1981



No. of Females - 44 No. of Males - 48

Footnotes

There is a fairly young population: 73% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ____ Wells ____ Other ____________

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes ____ No X
Landfill Site Utilized: Yes ____ No X
Other: Yes ____ No X

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: St. Anthony

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 6

Size: N/A Classrooms: N/A Teachers: 2

---

3. Residential

(1) Number of occupied private dwellings: 19
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 19
(5) Number of rented homes: 1
(6) Number of single detached homes: 18
(7) Number of single attached homes: 1
(8) Average number of persons per private household: 4.9
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: ______ N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes ___	No ___	Uses St. Anthony
Television	Yes X	No ___	CBC
Radio	Yes X	No ___	Various signals
Telephone	Yes X	No ___	Exchange service
High Frequency Radio	Yes ___	No X	

Operated By: ______

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats		X	
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

5.5.14 REMOTE COMMUNITY ANALYSIS

Community Profile: St. Lunaire - Griquet

Status: Incorporated

Location: Lat: 51° 32' N

Long: 55° 28' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 1010

Historic Population

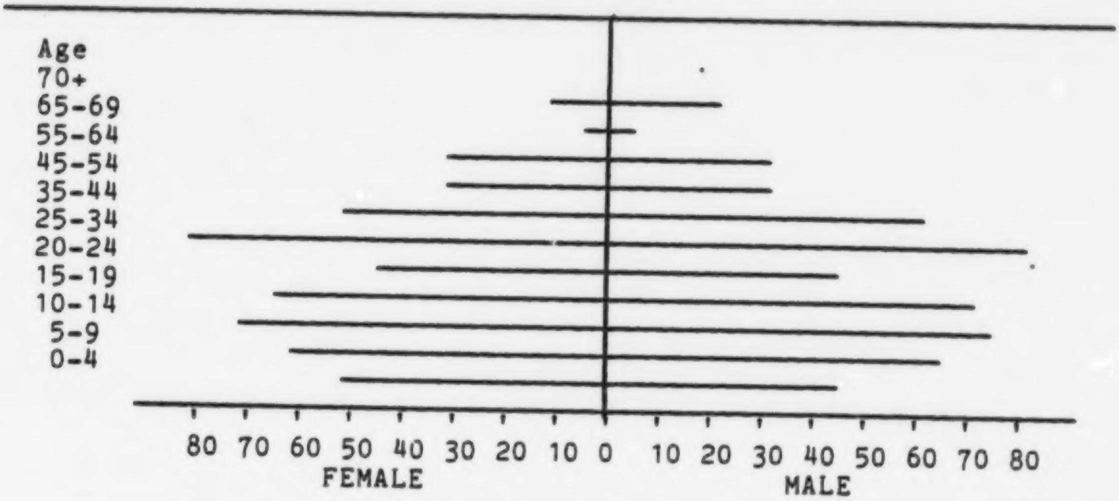
Year	Population	Increase	Growth %	Average Annual Growth %
1976	921			
1981	1010	89	9.7	1.9

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

At 2% per annum: 1986 - 1111 1991 - 1212

Population Structure by Age and By Gender - 1981



No. of Females - 485 No. of Males - 525

Footnotes

There is a fairly young population, with 73% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ____ Wells ____ Other ____________

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon ____ Septic Tanks ____ Treatment Plant ____ None __X__

---

3. Solid Waste Disposal

Garbage Collection Organized:	Yes ____	No __X__
Landfill Site Utilized:	Yes ____	No __X__
Other:	Yes ____	No __X__

---

4. Police Protection

R.C.M.P.: Yes __X__ No ____

Patrolled from: St. Anthony

---

5. Fire Protection Organized

Organized: Yes ____ No __X__

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ____

Other: ____________

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 12

Size: N/A Classrooms: N/A Teachers: 14

3. Residential

(1) Number of occupied private dwellings: 210
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: 165, very good; 25 need minor repair; 20 need major repair
(4) Number of owned homes: 190
(5) Number of rented homes: 20
(6) Number of single detached homes: 200
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 4.7
(9) Dwellings heated by steam or hot water: 50
(10) Dwellings heated by hot air: 70
(11) Dwellings heated with stove or space heater: 75
(12) Dwellings heated by electric heat: 0
(13) Other: ____________ 10

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: St. Lunaire - Grique

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOC (tonnes
Residential	1 815 917	521 573	43 409		1 304
Commercial	106 557				
Industrial					
Government	153 337				
Street Lighting	16 092				
TOTAL	2 091 903	521 573	43 409		1 304

1982 ENERGY PROFILE

LOAD CENTER: St. Anthony COMMUNITY: St. Lunaire - Griquet

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	6 537	20 174	1 636		10 550	38 897
Commercial	384					384
Industrial						
Government	552					552
Street Lighting	58					58
TOTAL	7 531	20 174	1 636		10 550	39 891

5.5.15 REMOTE COMMUNITY ANALYSIS

Community Profile:	Wild Bight
Status:	Unincorporated
Location:	Lat: 51° 35' N
	Long: 55° 55' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

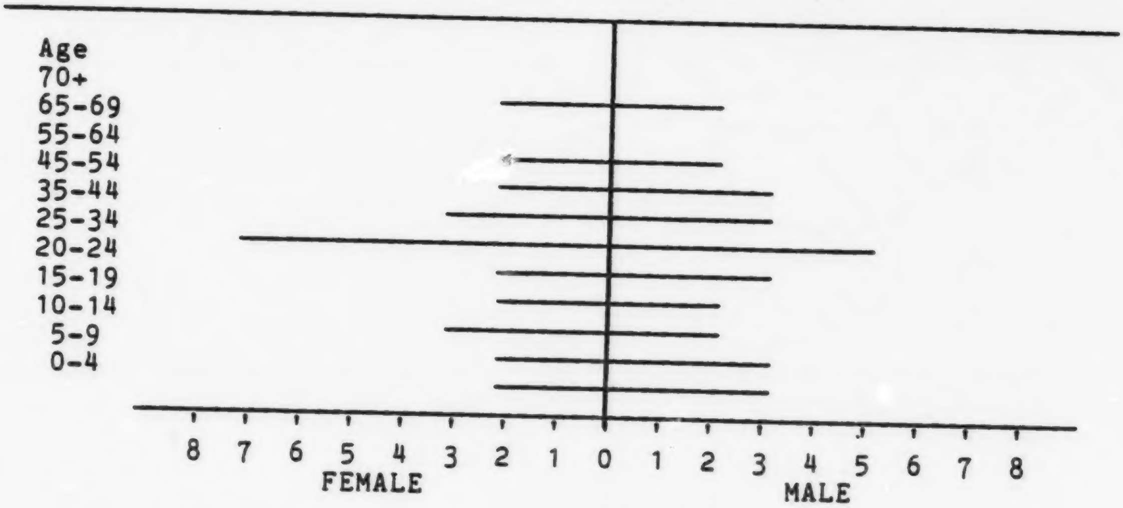
2. Demographics

1981 Population: 54

Projected Future Population Growth:

At 2% per annum: 1986 - 59 1991 - 65

Population Structure by Age and By Gender - 1981



No. of Females - 27 No. of Males - 27

Footnotes

There is a fairly young population: 65% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake _____ River _____ Wells __X__ Other ______________

Distribution:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__ Standpipes ___

Treatment:

Sedimentation _____ Filtration _____ Chlorination _____
Fluoridation _____ None __X__

---

2. Sewage

Collection System:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon __X__ Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes __X__ No _____
Landfill Site Utilized: Yes _____ No __X__
Other: dump site Yes __X__ No _____

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: St. Anthony

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ________

Other: ________________

---

2. Education

School located in community: Yes ____ No X

Grades: __________

Size: ____ Classrooms: ____ Teachers: ____

---

3. Residential

(1) Number of occupied private dwellings: 14
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 14
(5) Number of rented homes: 0
(6) Number of single detached homes: 12
(7) Number of single attached homes: 2
(8) Average number of persons per private household: 4.2
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes	No	Uses Cook's Harbour
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

5.6 REMOTE COMMUNITY ANALYSIS

Load Centre: St. Julian's - Grandois

Communities Serviced: St. Julian's - Grandois

Status: Unincorporated

Location: Lat: 51° 06' N
Long: 55° 45' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

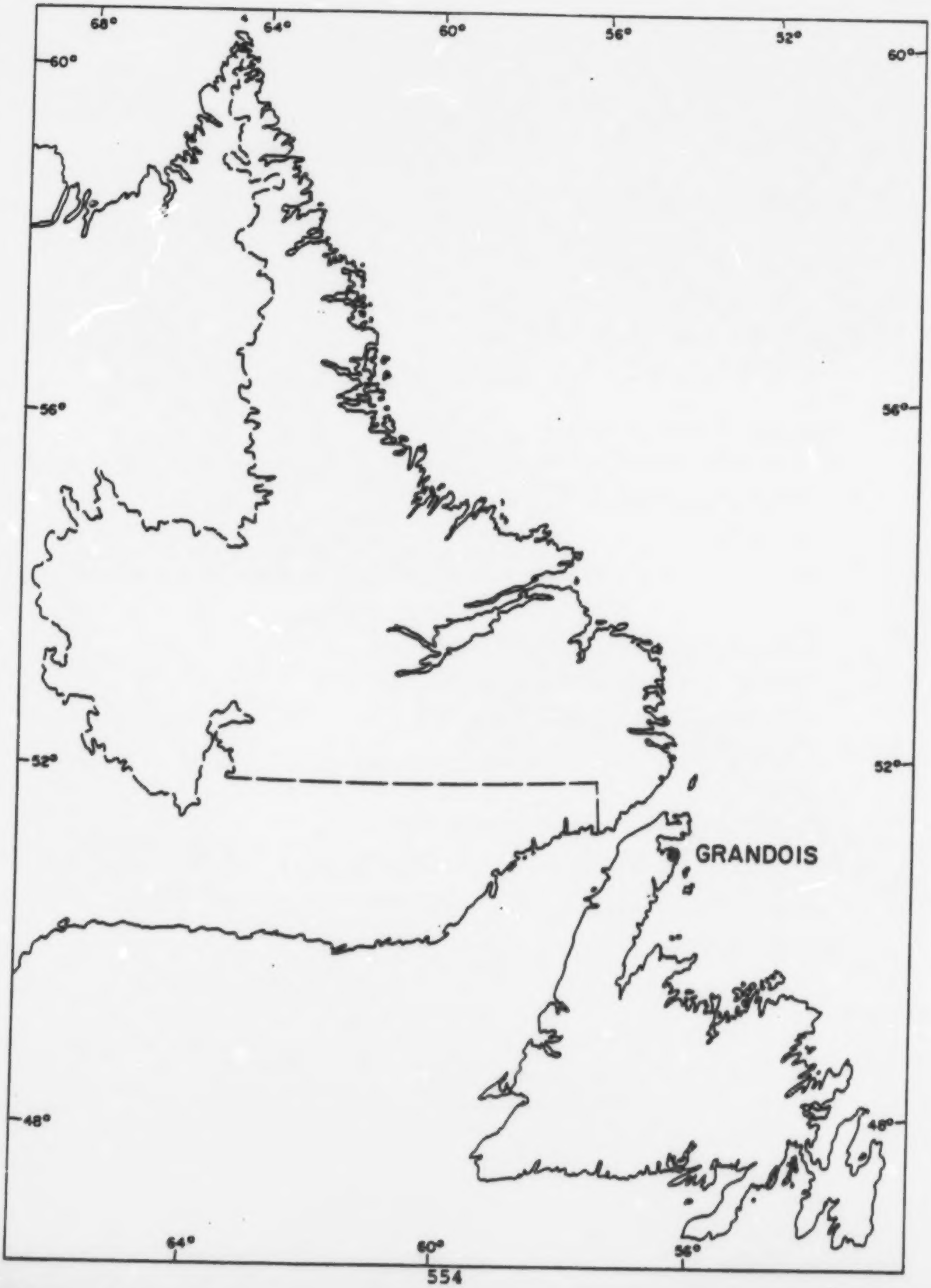
Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.


68°
64°
60°
56°
52°
60°
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52°
48°
60°
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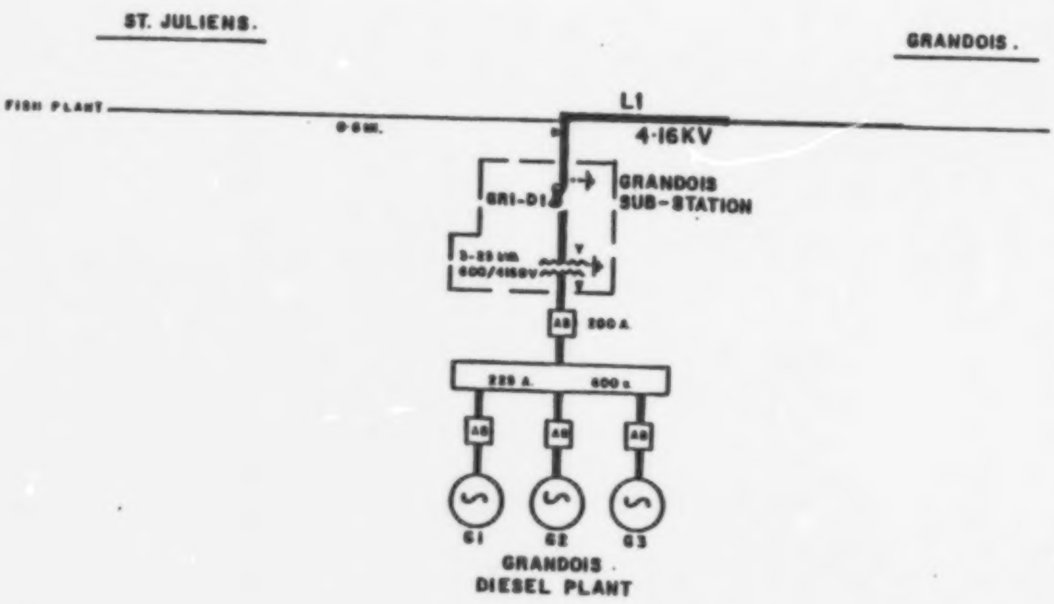
GRANDOIS


ST. JULIENS.
GRANDOIS.
FISH PLANT
0·6MI.
L1
4·16KV
GRANDOIS
SUB-STATION
GRI-D1
3-25 kVA
600/4160V
AB
200 A.
225 A.
600 A.
AB
AB
AB
G1
G2
G3
GRANDOIS
DIESEL PLANT

APPROVED BY: WFR	NEWFOUNDLAND AND LABRADOR HYDRO		Sh. 1 of 1
DATE: 81/01/26	GRANDOIS DISTRIBUTION SYSTEM		Doc. No. 210-1
REVISION No.: 2			

A. History and Current Status

1. N/A

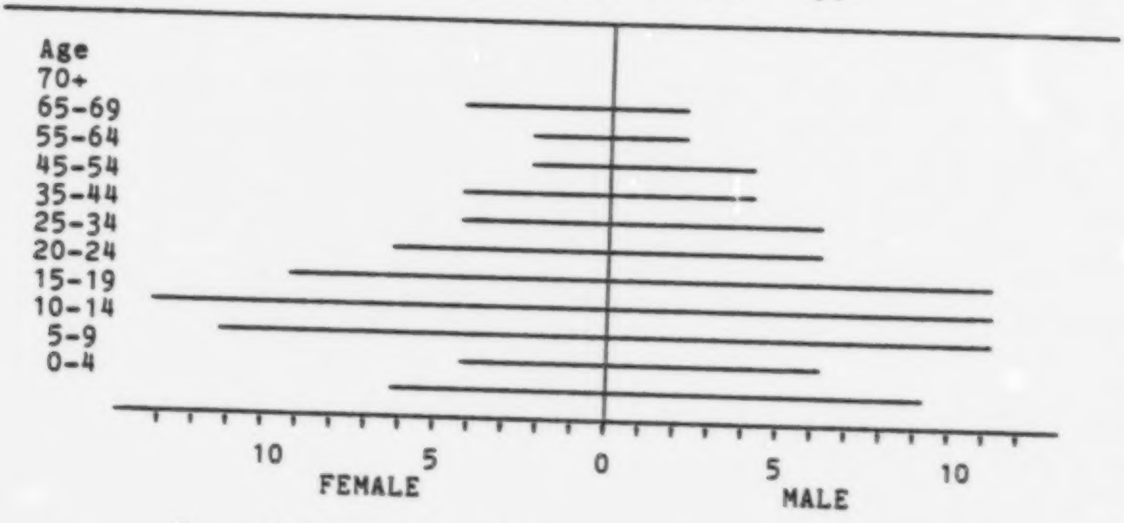
2. Demographics

1981 Population: 135

Projected Future Population Growth:

At 2% per annum: 1986 - 149 1991 - 162

Population Structure by Age and By Gender - 1981



No. of Females - 63 No. of Males - 72

Footnotes

There is a fairly young population: 75% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells _X_ Other __________

Distribution:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_ Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None _X_

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_

Disposal:

Lagoon _X_ Septic Tanks _X_ Treatment Plant ___ None ___

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes ____ No _X_
Landfill Site Utilized: Yes ____ No _X_
Other: Yes ____ No _X_

4. **Police Protection**

R.C.M.P.: Yes X No ____

Patrolled from: Roddickton

5. **Fire Protection Organized**

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. **Health**

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

2. **Education**

School located in community: Yes X No ____

Grades: Kindergarten to Grade 3

Size: N/A Classrooms: N/A Teachers: 2

3. Residential

(1) Number of occupied private dwellings: 24
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 24
(5) Number of rented homes: 0
(6) Number of single detached homes: 24
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 5.7
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	
Telephone	Yes X	No	
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Applicable	
Marine	CN Coastal Boats	Scheduled
Bus	Not Applicable	
Other	Not Applicable	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 1 - 60 kw Deutz with Tamper Generator
2 - 40 kw Deutz with Tamper Generators

3. **Diesel Fuel Consumption:**

	1981	1982
Annual Fuel Use (litres)	78 486	84,490
Annual Fuel Cost	$20,542.00	$25,262.00
Cost per Litre	$0.26	$0.30
Cost Increase		15%

4. **Electricity Demand - Historical and Predicted (mwh):**

1980	142	1985	195
1981	148	1986	212
1982	155	1987	229
1983	167	1988	249
1984	181		

5. **Peak Load Demand - Historical and Predicted (kw):**

1980	54	1985	81
1981	57	1986	89
1982	63	1987	97
1983	68	1988	106
1984	75		

H. ASSESSMENT OF RESOURCES - St. Julian's - Grandois

Small Scale Hydro Potential

There are three possible sites within 6 km. of the nearest transmission line. One of these sites, Le Fond Brook, is also included in the inventory for the nearby community of Croque and could be developed to serve either or both of these communities. It has a nominal capacity of 60 kw. through a head of approximately 16 M. The largest site is on Great Islets Brook, 5.6 km. from the community. It has a nominal capacity of 225 kw. through a head of approximately 14 M. A third but much smaller site is located in the community. It has a nominal capacity of 45 kw. through a head of approximately 12 M.

Wood Resources

The immediate vicinity of St. Julian's-Grandois contains lands having severe limitations which preclude the growth of commercial forests. Shallow, stony soils, low fertility and exposure are all contributing factors. Between 60 to 80% of this land can support growth of less than 10 ft.3 per acre per year, with about 20 to 40% able to support from 11 to 30 ft.^{3} per acre per year. Further inland between 5 and 10 km. along the access road, lands having moderately severe to severe limitations for commercial growth are found. About 50 % of this area is capable of supporting growths of 50 to 70 ft.^{3} per acre per year. The remaining areas are about equally divided between growth of 31 to 50 ft.^{3} per acre per year down to 11 to 30 ft.^{3} per acre per year. Dominant species are balsam fir and black spruce, although other species such as birch and tamarack are common. The timber rights are owned by the Crown to within 5 km. of the community, while Bowater Newfoundland Limited owns the remaining areas. Statistics Canada information indicates that approximately 35% of households use wood as a principal heating fuel. While further potential appears limited given the facts outlined above, additional study is required.

Peat Resources

The Provincial Government's fuel peat survey of 1981 shows that there are 600 hectares of fuel peat with a volume of about 6 M^3 X 10^6 in the area of Croque. The most significant deposit identified from topographical information is located about 10 km. from Croque and St. Julian's. Further investigation of peat resources in this area is recommended.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

Peat is probably the most promising alternative energy source in the area. The Provincial Government's fuel peat survey indicates that there are approximately 600 hectares of bogs with a volume of about 6 $M^3 \times 10^6$ of fuel peat available. This is the equivalent of approximately 68 million gallons of Number 2 fuel oil. Further research and study is recommended to evaluate the potential contribution that this energy source could make to heating and/or electrical generation requirements.

The small size of promising hydro sites in the area results in prohibitively high unit energy costs. For this reason, small scale hydro development in the Grandois area is not considered economically viable. The Annual Equivalent Cost of the most promising site is $0.54 per kwh. and is not competitive with diesel-generated electricity at $0.25 per kwh.

The information available on wood indicates that there is very limited potential for the widespread usage of this energy source as a heating fuel and no potential as a supply source for electrical generation.

The data base on wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Grandois COMMUNITY: St. Julian's - Grandoi

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	107 120	65 463	7 274		174
Commercial					
Industrial					
Government	17 626				
Street Lighting	2 677				
TOTAL	127 423	65 463	7 274		174

1982 ENERGY PROFILE

LOAD CENTER: Grandois COMMUNITY: St. Julians - Grandois

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	386	2 532	274		1 407	4 599
Commercial						
Industrial						
Government	63					63
Street Lighting	10					10
TOTAL	459	2 532	274		1 407	4 672

6.0 Profiles and Assessments by Load Centre and Community - Central Newfoundland

6.1 REMOTE COMMUNITY ANALYSIS

Load Centre:	Change Islands
Communities Serviced:	Change Islands
Status:	Town
Location:	Lat: 49° 40' N
	Long: 54° 25' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

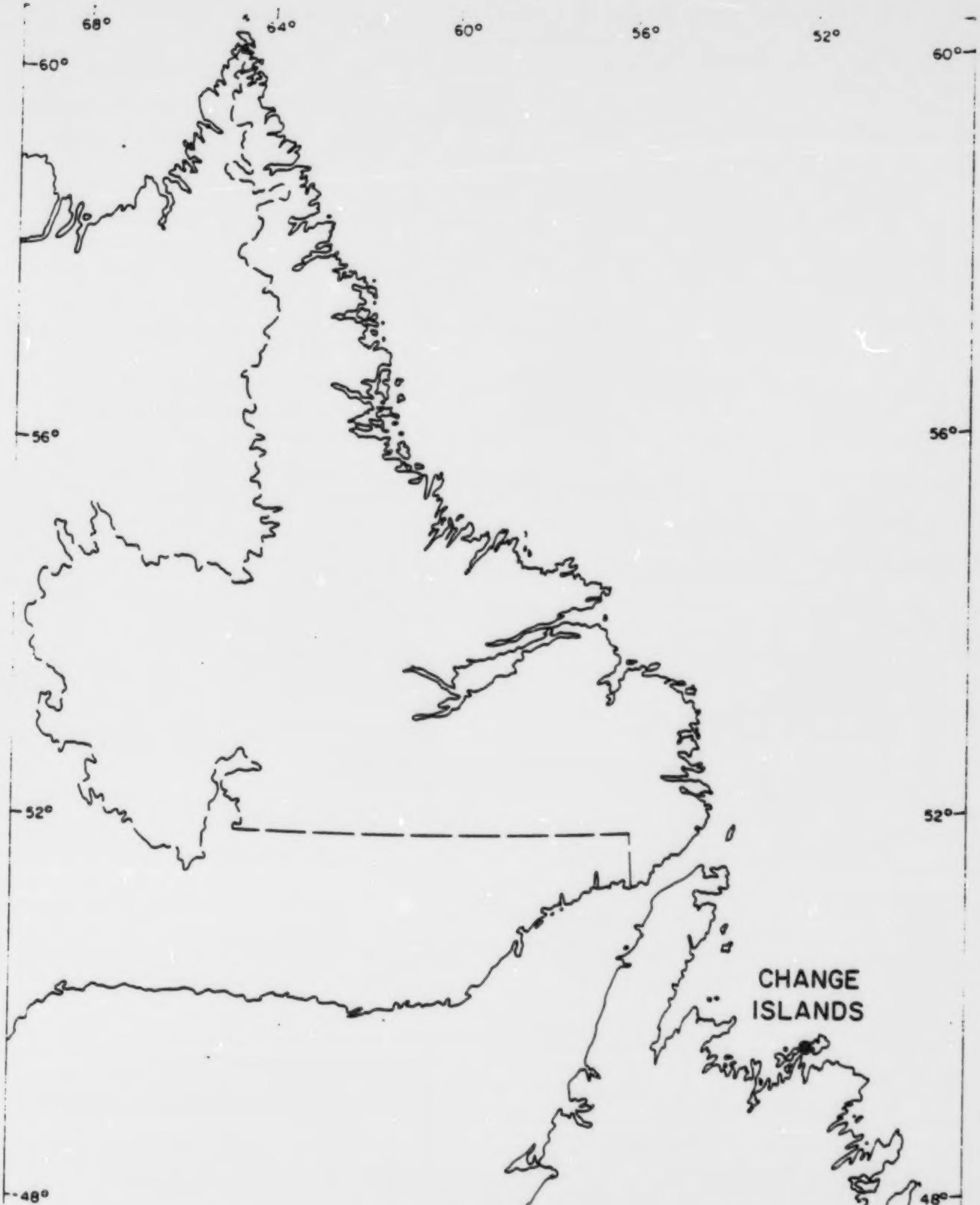
Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.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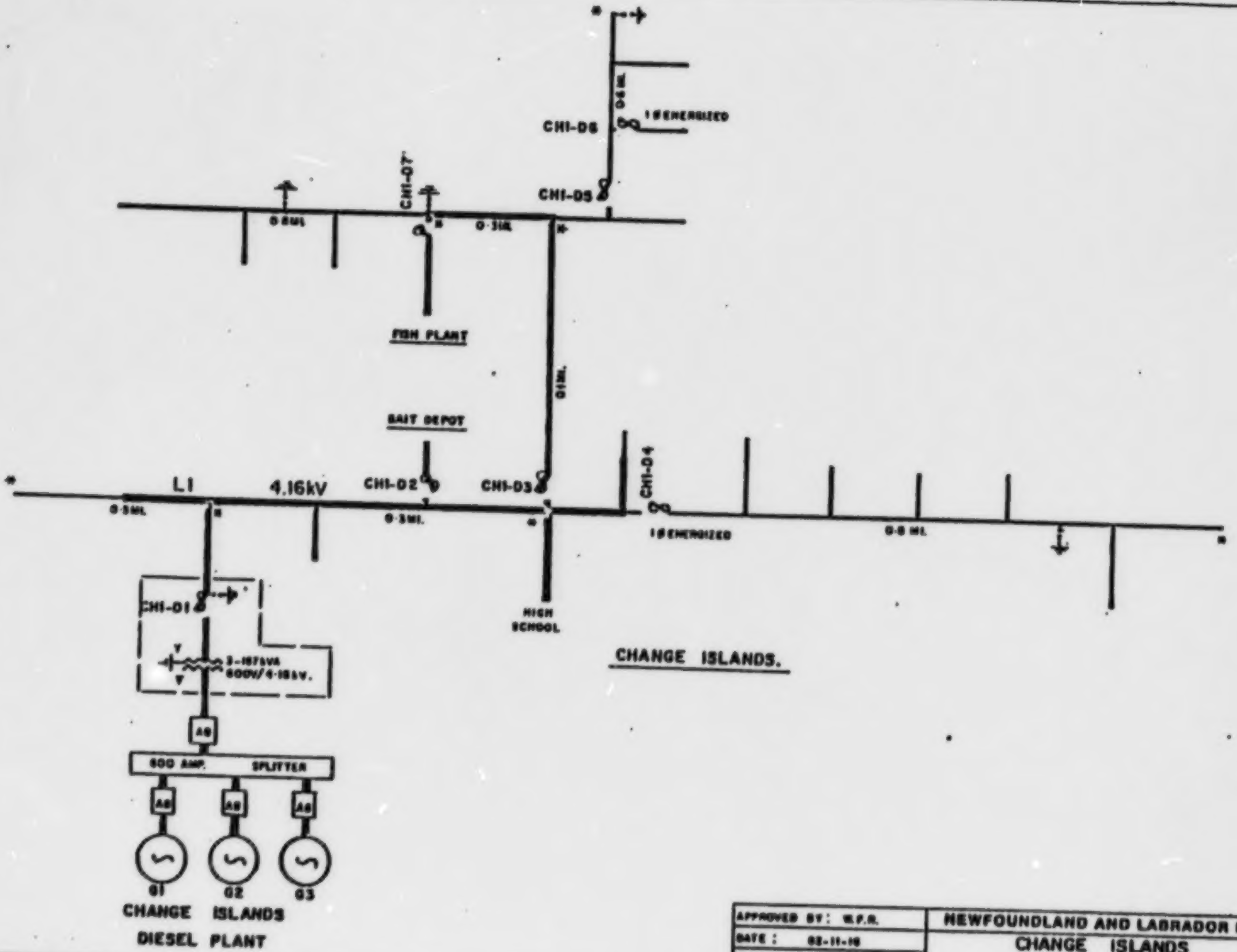
CHANGE ISLANDS


CHANGE ISLANDS.
L1
4.16kV
0·3MI.
0·3MI.
CHI-D1
3-167kVA
600V/4·16kV.
AB
600 AMP. SPLITTER
AB
AB
AB
G1
G2
G3
CHANGE ISLANDS
DIESEL PLANT
CHI-D2
BAIT DEPOT
CHI-D3
HIGH SCHOOL
0·1MI.
CHI-D4
1∅ENERGIZED
0·8 MI.
FISH PLANT
CHI-07
0·8MI.
0·3MI.
CHI-D5
CHI-D6
0·6MI.
1∅ENERGIZED

APPROVED BY: W.F.R.
DATE: 82-11-16
REVISION No.: 4

NEWFOUNDLAND AND LABRADOR HYDRO
CHANGE ISLANDS
DISTRIBUTION SYSTEM.

SH 1 of 1
DWG No. 120-1

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 580

Historic Population

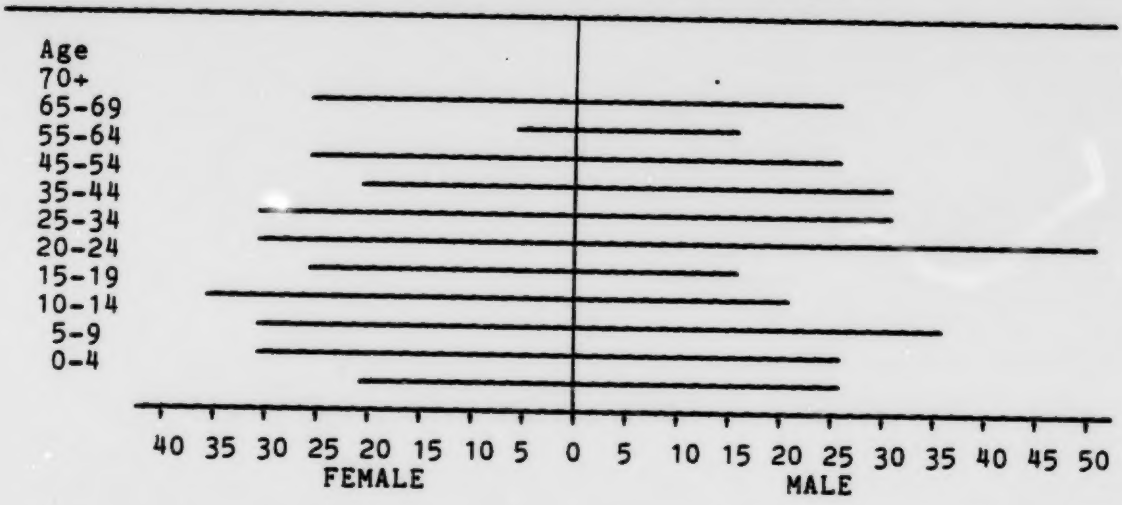
Year	Population	Increase	Growth %	Average Annual Growth %
1976	535			
1981	580	45	8.4	1.7

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

1. At 2% per annum: 1986 - 638 1991 - 696

Population Structure by Age and By Gender - 1981



No. of Females - 285 No. of Males - 295

Footnotes

There is a fairly young population: 60% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake _____ River _____ Wells __X__ Other __________

Distribution:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__ Standpipes ___

Treatment:

Sedimentation _____ Filtration _____ Chlorination _____
Fluoridation _____ None __X__

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes X No ____
Other: Yes ____ No X

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Fogo

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No ____

Size of Facility: 46.5^2M

Staff: Doctors: N/A Nurses: N/A

Other: Total Staff - 1

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 11

Size: N/A Classrooms: N/A Teachers: 9

---

3. Residential

(1) Number of occupied private dwellings: 165
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: 95, very good; 60 need minor repairs; 15 need major repairs
(4) Number of owned homes: 155
(5) Number of rented homes: 5
(6) Number of single detached homes: 155
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 3.6
(9) Dwellings heated by steam or hot water: 15
(10) Dwellings heated by hot air: 20
(11) Dwellings heated with stove or space heater: 125
(12) Dwellings heated by electric heat: 0
(13) Other: wood 5

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Change Islands Ferry	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. **Owner:** Newfoundland and Labrador Hydro/Power Distribution District

2. **Diesel Type:** 1 - 100 kw Deutz with Tamper Generator
2 - 300 kw Cat. with Leroy Somer Generators

3. **Diesel Fuel Consumption:**

	1981	1982
Annual Fuel Use (litres)	454,174	475,179
Annual Fuel Cost	$127,402.00	$152,029.00
Cost per Litre	$0.28	$0.32
Cost Increase		14%

4. **Electricity Demand - Historical and Predicted (mwh):**

1980	1343	1985	1813
1981	1478	1986	1813
1982	1565	1987	1459
1983	1680	1988	--
1984	1745		

5. Peak Load Demand - Historical and Predicted (kw):

1980	336	1985	487
1981	384	1986	487
1982	420	1987	--
1983	450	1988	--
1984	468		

H. ASSESSMENT OF RESOURCES - Change Islands

Small Scale Hydro Potential

Available information indicates that there is no potential for this alternative in this area.

Wood Resources

Change Islands comprise lands which have severe limitations that preclude the growth of commercial forests. These limitations are shallow soils, exposure and boglands. About 20% of the southern half of the island can support very limited commercial forests. A yearly growth of about 10 ft.^{3} per acre per year can be expected on Change Islands. The dominant species is black spruce. Timber rights are owned by the Crown.

The Statistics Canada data base indicates that approximately 46% of householders use wood as a primary heating source. The potential to increase the use of this energy source would appear to be limited, but nevertheless requires further study.

Peat Resources

In 1978 the Government of Newfoundland and Labrador carried out an inventory of fuel peat resources of northeastern Newfoundland. This inventory showed no potential fuel peat resources on Change Islands.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is a potential site for heat recovery in this area, i.e., a community church is within close proximity to the diesel plant.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

There is no identifiable potential for either small scale hydro or fuel peat on Change Islands. With approximately 46% of residents currently utilizing the limited fuelwood resources in this area, the potential for increased exploitation of this resource appears limited but should nevertheless be studied more carefully.

The data base on wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

The most promising option open to Change Islands is the potential for heat recovery associated with the community church which is close to the diesel plant, and this situation warrants further study.

1982 ENERGY PROFILE

LOAD CENTER: Change Islands COMMUNITY: Change Islands

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	972 739	327 318	36 369		1 478
Commercial	34 034				
Industrial	278 400				
Government	34 034				
Street Lighting	64 152				
TOTAL	1 383 358	327 318	36 369		1 478

1982 ENERGY PROFILE

LOAD CENTER: Change Islands COMMUNITY: Change Islands

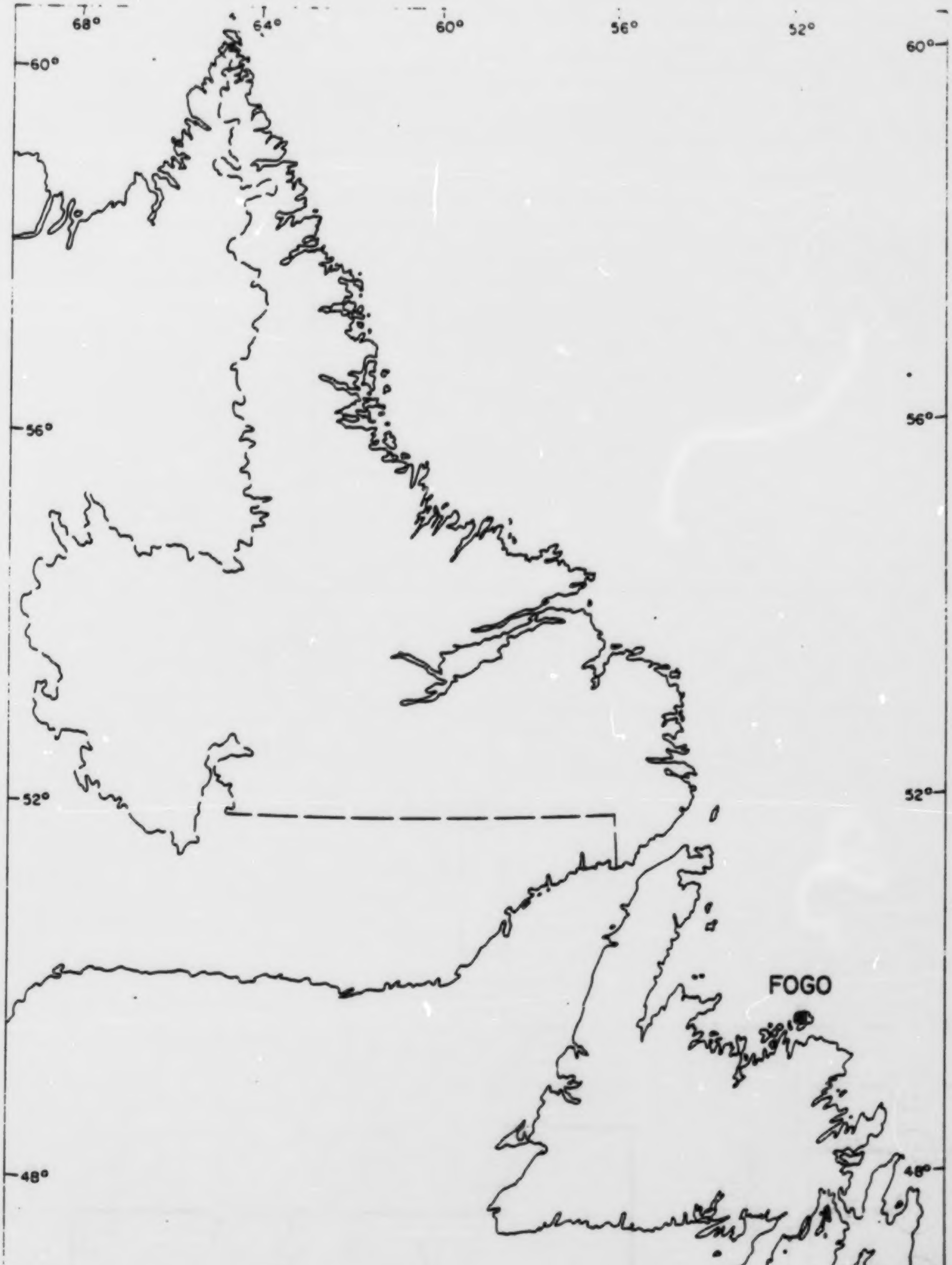
	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	3 502	12 659	1 370		11 954	29 485
Commercial	123					123
Industrial	1 002					1 002
Government	123					123
Street Lighting	231					231
TOTAL	4 980	12 659	1 370		11 954	30 964

6.2 REMOTE COMMUNITY ANALYSIS

Load Center: Fogo

Communities Serviced: Deep Bay, Fogo, Island Harbour, Joe Batt's Arm - Barr'd Island - Shoal Bay, Seldom - Little Seldom, Stag Harbour, Tilting

Comments: The diesel generating plant on Fogo Island services a number of communities as illustrated above. When such information is available, profiles will be presented for each of these communities separately, beginning with Deep Bay.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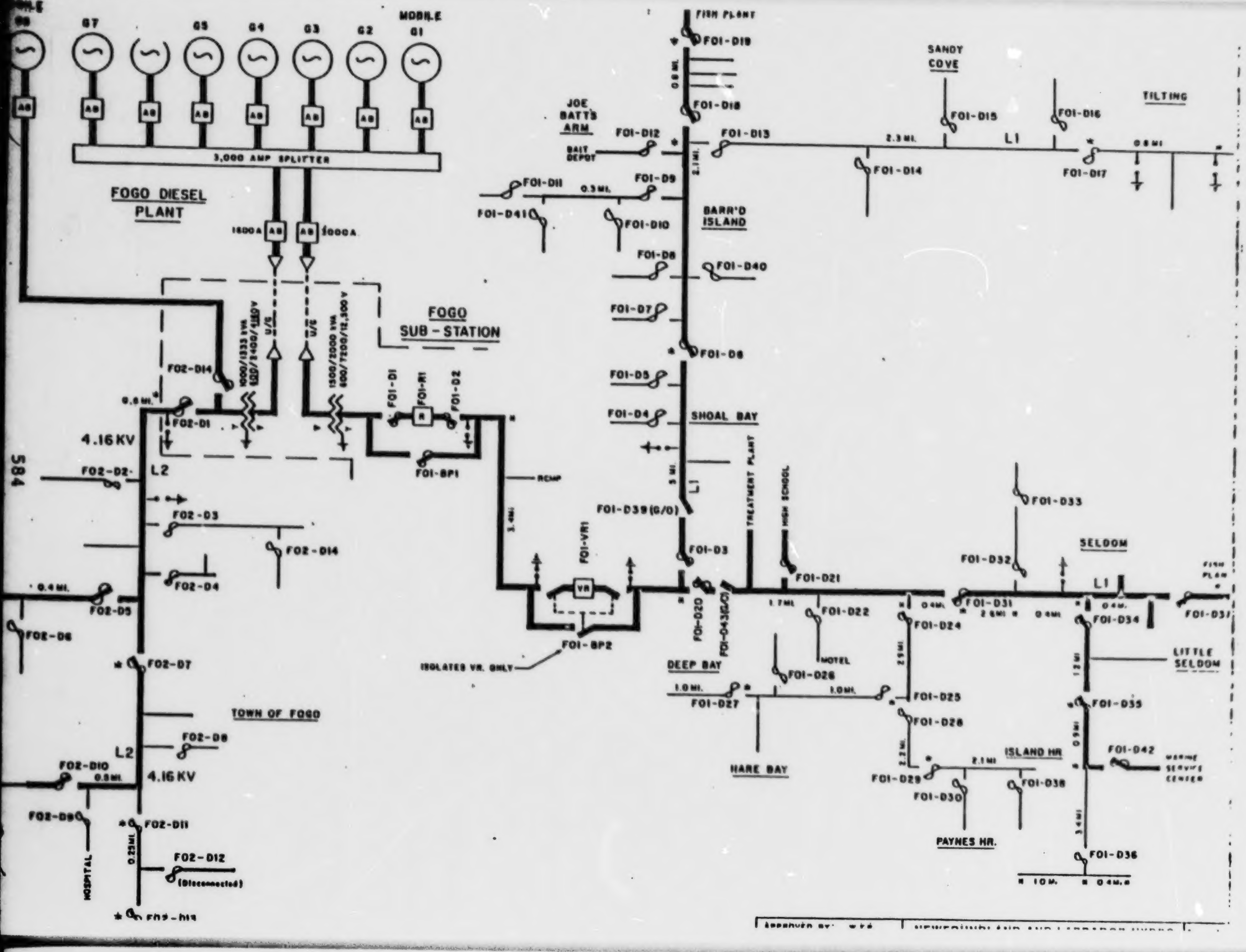

MOBILE G6
G7
G5
G4
G3
G2
MOBILE G1
AB
3,000 AMP SPLITTER
FOGO DIESEL PLANT
1600A
1000A
U/G
1000/1333 kVA 600/2400/4160V
1500/2000 kVA 600/7200/12,500V
FOGO SUB-STATION
F02-D14
F02-D1
0.6 MI.
4.16 KV
L2
F02-D2
F02-D3
F02-D14
F02-D4
0.4 MI.
F02-D5
F02-D6
F02-D7
TOWN OF FOGO
F02-D8
F02-D10
0.8 MI.
4.16 KV
F02-D9
HOSPITAL
F02-D11
0.25 MI.
F02-D12 (Disconnected)
F02-D13
F01-D1
F01-R1
R
F01-D2
F01-BP1
RCMP
3.4 MI.
F01-VR1
VR
F01-BP2
ISOLATED VR. ONLY
FISH PLANT
F01-D19
0.8 MI.
F01-D18
JOE BATT'S ARM
BAIT DEPOT
F01-D12
F01-D13
2.1 MI.
F01-D11
0.3 MI.
F01-D9
F01-D41
F01-D10
BARR'D ISLAND
F01-D8
F01-D40
F01-D7
F01-D6
F01-D5
F01-D4
SHOAL BAY
5 MI.
L1
F01-D39 (G/O)
F01-D3
TREATMENT PLANT
HIGH SCHOOL
F01-D21
F01-D20
F01-D43 (G/O)
1.7 MI.
F01-D22
MOTEL
DEEP BAY
1.0 MI.
F01-D27
F01-D26
1.0 MI.
HARE BAY
F01-D24
2.9 MI.
F01-D25
F01-D28
2.2 MI.
F01-D29
2.1 MI.
F01-D30
ISLAND HR
F01-D38
PAYNES HR.
SANDY COVE
F01-D15
2.3 MI.
F01-D14
L1
F01-D16
TILTING
F01-D17
0.8 MI.
F01-D33
SELDOM
F01-D32
F01-D31
2.8 MI.
0.4 MI.
F01-D34
FISH PLANT
F01-D37
LITTLE SELDOM
1.2 MI.
F01-D35
0.9 MI.
F01-D42
MARINE SERVICE CENTER
3.4 MI.
F01-D36
1.0 MI.
0.4 MI.
APPROVED BY:
NEWFOUNDLAND AND LABRADOR HYDRO

6.2.1 REMOTE COMMUNITY ANALYSIS

Community Profile: Deep Bay

Status: Unincorporated

Location: Lat: 49° 40' N

Long: 54° 18' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 152

Historic Population

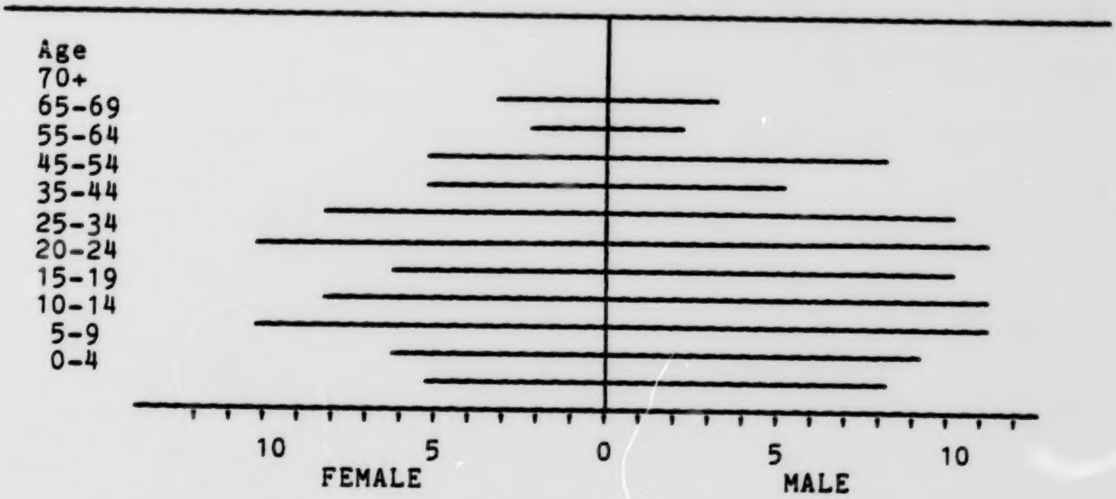
Year	Population	Increase	Growth %	Average Annual Growth %
1971	146			
1976	150	4	2.7	0.5
1981	152	2	1.3	0.3

Source Note: 1981 Census of Canada.
The Rounder, August 1978, p. 9.

Projected Future Population Growth:

At 2% per annum: 1986 - 167 1991 - 182

.Population Structure by Age and By Gender - 1981



No. of Females - 68 No. of Males - 84

Footnotes

There is a fairly young population, with 68% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. **Water**

Source:

Lake ____ River ____ Wells _X_ Other ____________

Distribution:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_ Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None _X_

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes ____ No X
Landfill Site Utilized: Yes ____ No X
Other: open dump Yes X No ____

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Fogo

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ______

Other: ____________

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 7

Size: N/A Classrooms: N/A Teachers: 2

---

3. Residential

(1) Number of occupied private dwellings: 35
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 34
(5) Number of rented homes: 1
(6) Number of single detached homes: 32
(7) Number of single attached homes: 3
(8) Average number of persons per private household: 4.4
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: ____________ N/A

---

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

					Comments
Post Office	Yes	X	No		local
Television	Yes	X	No		CBC
Radio	Yes	X	No		Various signals
Telephone	Yes	X	No		Exchange Service
High Frequency Radio	Yes		No	X	

Operated By: ____________

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Fogo Island Ferry	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: Fogo COMMUNITY: Deep Bay

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	139 115	130 927	14 547		87
Commercial	14 888				
Industrial					
Government					
Street Lighting	4 455				
TOTAL	158 458	130 927	14 547		87

1982 ENERGY PROFILE

LOAD CENTER: Fogo COMMUNITY: Deep Bay

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	501	5 064	548		704	6 817
Commercial	54					54
Industrial						
Government						
Street Lighting	16					16
TOTAL	571	5 064	548		704	6 887

6.2.2 REMOTE COMMUNITY ANALYSIS

Community Profile: Fogo

Status: Incorporated

Location: Lat: 49 °43 'N

Long: 54 °17 'W

Sources of Information:

Publications and Articles

Provincial Planning Office, Department of Municipal Affairs and Housing, "Fogo Central Local Area Plan," April 1979.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Department of Health, June 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May 1983.

Imperial Oil Limited, July 1983.

Department of Transportation, June 1983

Intergovernmental Affairs Secretariat, June 1983.

A. History and Current Status

1. Fogo was originally settled around 1680. Fishery was the mainstay of the economy. During the late 1800's and early 1900's, Fogo Island was operated by several large merchants.

   The Fogo Island Shipbuilding and Producers Co-operative Society was formed in 1967 and began construction of a long liner fleet. The creation of the long liner fleet reduced the island's dependence on the inshore fishery and gave the economy a significant boost. Today the island's economy is still dependent upon the fishery and shipbuilding.

2. Demographics

1981 Population: 1,105

Historic Population

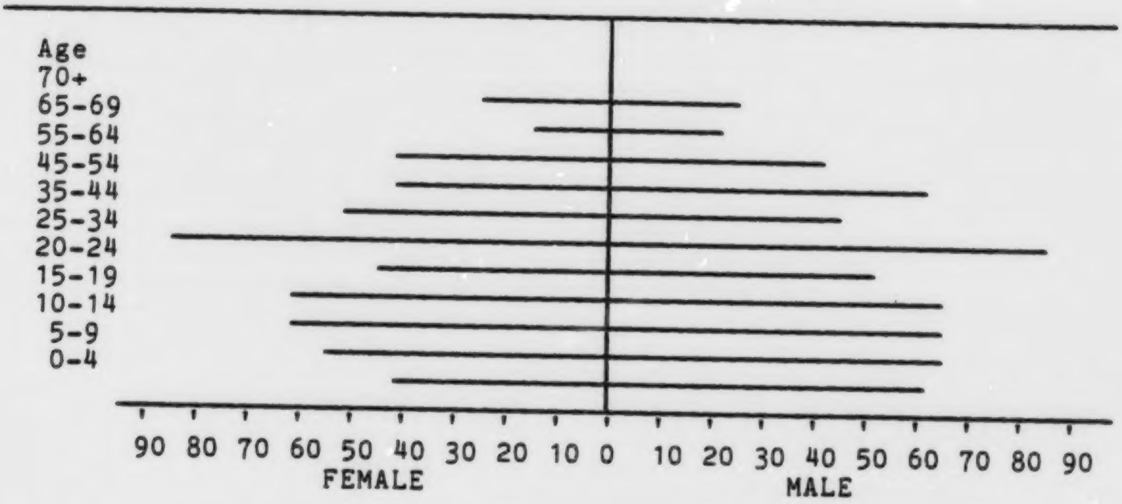
Year	Population	Increase	Growth %	Average Annual Growth %
1971	1,155			
1976	1,100	-55	-4.8	-0.9
1981	1,105	5	0.4	0.1

Source Note: 1981 Census of Canada.
The Rounder, August 1978, p.9.

Projected Future Population Growth:

At 2% per annum: 1986 - 1,216 1991 - 1,326

Population Structure by Age and By Gender - 1981



No. of Females - 530 No. of Males - 575

Footnotes:

Sixty-seven percent of the total population is under the age of 35. This shows potential for future population growth.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ___ River ___ Wells X Other ___

Distribution:

Pipe X Truck ___ Individual Systems X None ___

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ___ Filtration ___ Chlorination ___
Fluoridation ___ None X

2. Sewage

Collection System:

Pipe X Truck ___ Individual Systems X None ___

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon ___ Septic Tanks X Treatment Plant X None ___

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ___
Landfille Site Utilized: Yes ___ No X
Other: Open Dump Yes X No ___

---

4. Police Protection

R.C.M.P.: Yes X No ___

Patrolled from: Fogo

---

5. Fire Protection Organized

Organized: Yes X No ___

Equipment: N/A

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes X No ____

Size of Facility: 940 M^2

Staff: Doctors: 2 Nurses: 0

Other: visiting dentist

---

2. Education

School located in community: Yes 4 No ____

Grades: Grades 9 - 11; Kindergarten - Grade 3; Grades 7 - 8; Grades 4 - 6

Size: N/A Classrooms: N/A Teachers: 12; 5; 8; 5

---

3. Residential

(1) Number of occupied private dwellings: 265
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: 185, very good; 40 need minor repairs; 30 need major repairs
(4) Number of owned homes: 245
(5) Number of rented homes: 20
(6) Number of single detached homes: 260
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 4.1
(9) Dwellings heated by steam or hot water: 115
(10) Dwellings heated by hot air: 30
(11) Dwellings heated with stove or space heater: 100
(12) Dwellings heated by electric heat: 0
(13) Other: wood 5

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

1. Fishery
2. Shipbuilding

E. COMMUNICATION LINKS

					Comments
Post Office	Yes	X	No		local
Television	Yes	X	No		CBC
Radio	Yes	X	No		Various signals
Telephone	Yes	X	No		Exchange Service
High Frequency Radio	Yes		No	X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Regular Ferry Service between Seldom and Carmanville	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. **Owner**: Newfoundland and Labrador Hydro/Power Distribution District

2. **Diesel Type**
1 - 300 kw Cat. with G.E. Generator
1 - 670 kw Cat. with CANRON Generator
2 - 300 kw Cat. with B.B.C. Generators
2 - 300 kw Cat. with CANRON Generators
1 - 300 kw Cat. with B.B.C. Generator
1 - 850 kw Cat. with KATO Generator

3. Diesel Fuel Consumption

	1981	1982
Annual Fuel Use (litres)	2,574,072	2,732,846
Annual Fuel Cost	$715,746.00	$906,205.00
Cost per Litre	$0.28	$0.33
Cost Increase	--	18%

5. Electricity Demand - Historical and Predicted (mwh):

1980	7620	1985	10912
1981	8243	1986	11465
1982	8962	1987	9922
1983	9596	1988	--
1984	10228		

6. Peak Load Demand - Historical and Predicted (kw):

1980	1860	1985	2705
1981	1890	1986	2846
1982	2220	1987	--
1983	2369	1988	--
1984	2530		

H. ASSESMENT OF RESOURCES - Fogo Island Load Centre - All Communities

Small Scale Hydro Potential

Available information shows that there is no potential for small scale hydro development on Fogo Island.

Wood Resources

Fogo Island can roughly be divided into two sections for forest growth. The northern two-thirds contains lands that have severe limitations which preclude commercial forest growth. These include exposure and rock with little or no soil cover. Potential growth is somewhat less than 10 $ft.^3$ per acre per year. The dominant species is black spruce. The southern third of the island contains lands that have severe limitations to the growth of commercial forests. This area also includes about 50% of lands that cannot support commercial growth. The limitations are exposure and shallow soils. Many wet, boggy areas also exist in this area. The southern third of the island can sustain growths of less than 10 $ft.^3$ per acre per year over about 50% of the land area, and 11 to 30 $ft.^3$ per year for the other 50%. Black spruce is the dominant species in this area. Forests are owned by the Crown on Fogo Island. Timber rights are also owned by the Crown.

The Statistics Canada data base indicates that the consumption of wood as a primary fuel ranges from a low of 6% in Fogo to a high of 17% in Tilting. For the remaining communities the average is 10%. The potential to increase the use of wood as a primary and secondary fuel appears limited.

Peat Resources

In 1978 the Government of Newfoundland and Labrador carried out an inventory of fuel peat resources for northeastern Newfoundland. This inventory shows no potential fuel peat resources on Fogo Island.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

With no potential for small scale hydro development or fuel peat, and with wood resources severely limited, Fogo Island shows little potential for modifying its current energy situation.

The data base on wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Fogo COMMUNITY: Fogo

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	1 373 610	961 498	106 833		326
Commercial	364 368				
Industrial	394 505				
Government	69 404				
Street Lighting	277 497				
TOTAL	2 479 384	961 498	106 833		326

1982 ENERGY PROFILE

LOAD CENTER: Fogo COMMUNITY: Fogo

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	4 945	37 186	4 025		2 637	48 793
Commercial	1 312					1 312
Industrial	1 420					1 420
Government	250					250
Street Lighting	999					999
TOTAL	8 926	37 186	4 025		2 637	52 774

6.2.3 REMOTE COMMUNITY ANALYSIS

Community Profile: Island Harbour

Status: Unincorporated

Location: Lat: 49° 37' N
Long: 54° 19' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 281

Historic Population

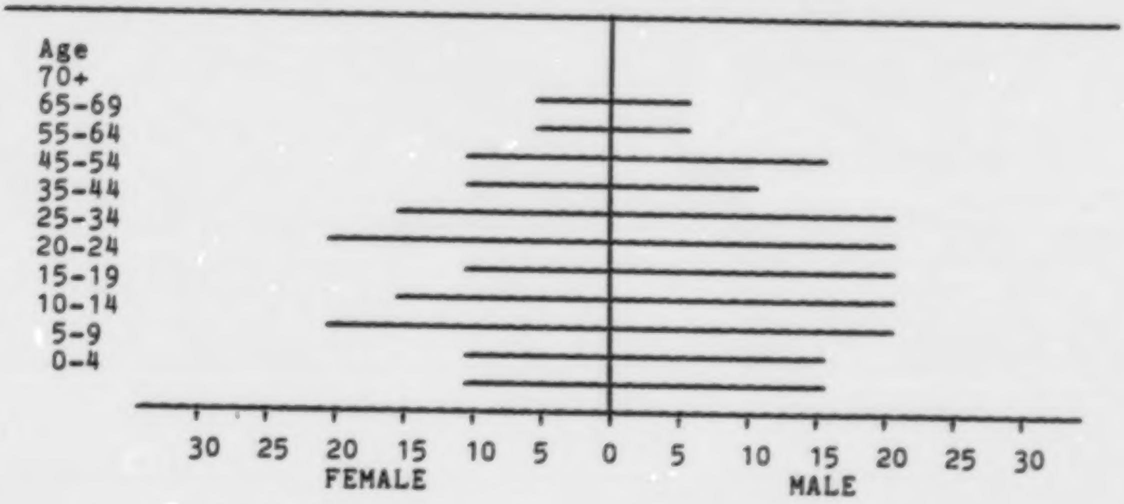
Year	Population	Increase	Growth %	Average Annual Growth %
1971	331			
1976	289	-42	-12.7	-2.5
1981	281	-8	-1.6	-0.3

Source Note: 1981 Census of Canada.
The Rounder, August 1978, p. 9.

Projected Future Population Growth:

At 2% per annum: 1986 - 309 1991 - 337

Population Structure by Age and By Gender - 1981



No. of Females - 123 No. of Males - 158

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells X Other ____

Distribution:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon __X__ Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes ____ No __X__
Landfill Site Utilized: Yes ____ No __X__
Other: open dump Yes __X__ No ____

---

4. Police Protection

R.C.M.P.: Yes __X__ No ____

Patrolled from: Fogo

---

5. Fire Protection Organized

Organized: Yes ____ No __X__

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 6

Size: N/A Classrooms: N/A Teachers: 8

3. Residential

(1) Number of occupied private dwellings: 66
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 63
(5) Number of rented homes: 3
(6) Number of single detached homes: 60
(7) Number of single attached homes: 6
(8) Average number of persons per private household: 4.4
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: ____ N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange Service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Fogo Island Ferry	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: Fogo COMMUNITY: Island Harbour

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	351 866	188 208	20 912		109
Commercial	58 728				
Industrial					
Government	44 303				
Street Lighting	297				
TOTAL	455 194	188 208	20 912		109

1982 ENERGY PROFILE

LOAD CENTER: Fogo COMMUNITY: Island Harbour

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 267	7 279	788		882	10 216
Commercial	211					211
Industrial						
Government	159					159
Street Lighting	1					1
TOTAL	1 639	7 279	788		882	10 587

6.2.4 REMOTE COMMUNITY ANALYSIS

Community Profile: Joe Batt's Arm - Barr'd Islands - Shoal Bay

Status: Incorporated

Location: Lat: 49° 44' N

Long: 54° 10' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 1155

Historic Population

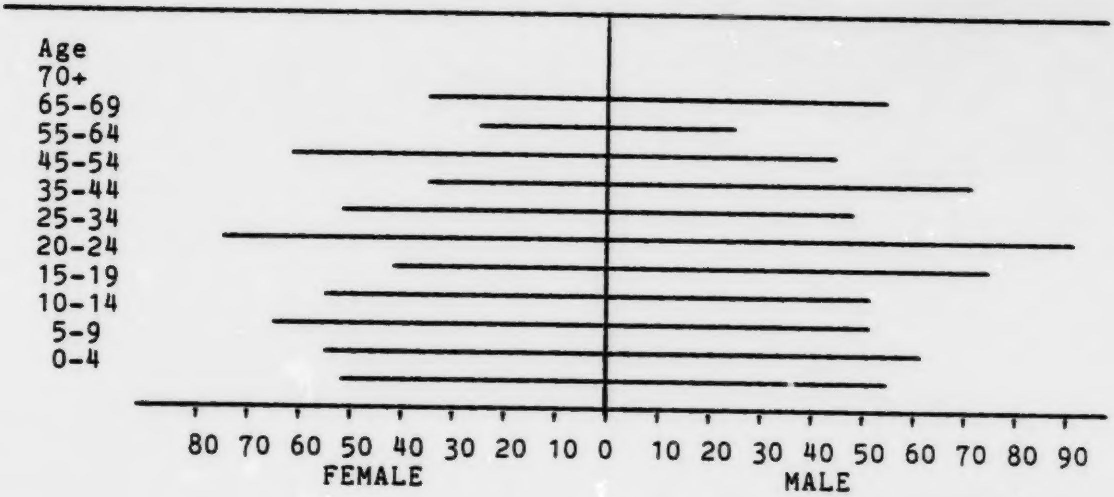
Year	Population	Increase	Growth %	Average Annual Growth %
1971	1174			
1976	1009	-165	-14.1	-2.8
1981	1155	132	12.9	2.6

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

At 2% per annum: 1986 - 1271 1991 - 1386

Population Structure by Age and By Gender - 1981



No. of Females - 535   No. of Males - 620

Footnotes

There is a fairly young population, with over 60% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells X Other ____

Distribution:

Pipe X Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe X Truck ___ Individual Systems X None ___

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks X Treatment Plant ___ None ___

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ___
Landfill Site Utilized: Yes ___ No X
Other: open dump Yes X No ___

4. Police Protection

R.C.M.P.: Yes X No ___

Patrolled from: Fogo

5. Fire Protection Organized

Organized: Yes ___ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: Services available in Fogo

---

2. Education

School located in community: Yes ____ No X

School available in Fogo

Grades: ____

Size: ____ Classrooms: ____ Teachers: ____

---

3. Residential

(1) Number of occupied private dwellings: 295
(2) Number of houses with sewer and water: ____
(3) Housing Condition: 245, very good; 35 need minor repair; 15 need major repair
(4) Number of owned homes: 285
(5) Number of rented homes: 10
(6) Number of single detached homes: 280
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 3.9
(9) Dwellings heated by steam or hot water: 55
(10) Dwellings heated by hot air: 35
(11) Dwellings heated with stove or space heater: 215
(12) Dwellings heated by electric heat: 0
(13) Other: ____ 0

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

1. Fishery

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange Service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Regular Ferry Service between Seldom & Carmanvil	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: Fogo

COMMUNITY: Shoal Bay, Barr'd Islands - Joe Batt's Arm

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	1 519 361	1 125 157	125 017		543
Commercial	101 810				
Industrial					
Government	65 092				
Street Lighting	31 284				
TOTAL	1 717 547	1 125 157	125 017		543

1982 ENERGY PROFILE

LOAD CENTER: Fogo

COMMUNITY: Shoal Bay, Barr'd Islands - Joe Batt's Arm

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	5 470	43 515	4 711		4 392	58 088
Commercial	367					367
Industrial						
Government	234					234
Street Lighting	113					113
TOTAL	6 291	43 515	4 711		4 392	58 802

6.2.5 REMOTE COMMUNITY ANALYSIS

Community Profile:	Seldom - Little Seldom
Status:	Incorporated
Location:	Lat: 49° 36' N
	Long: 54° 12' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 560

Historic Population

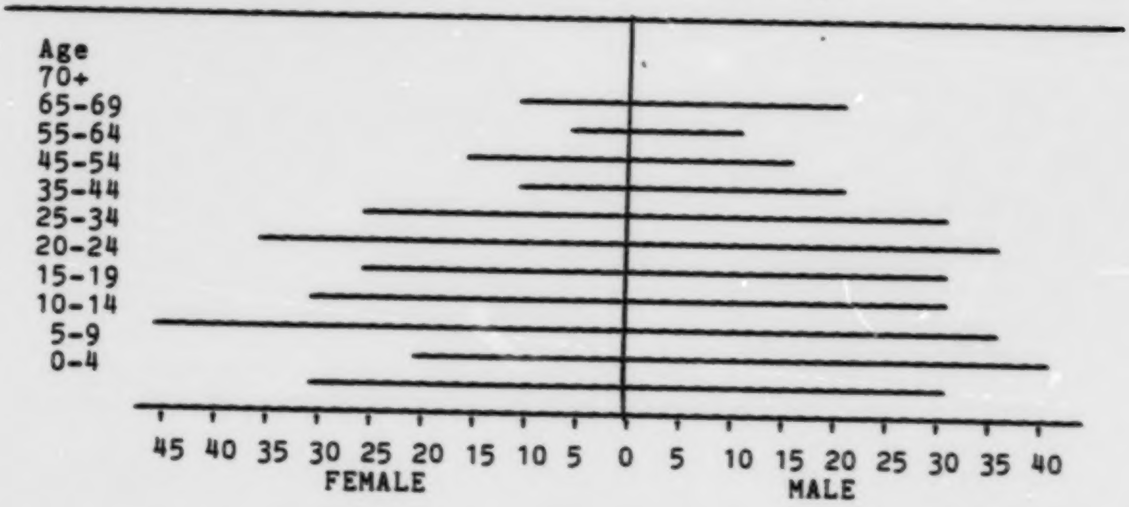
Year	Population	Increase	Growth %	Average Annual Growth %
1971	536			
1976	522	-14	-2.6	-0.5
1980	560	38	7.3	1.5

Source Note: 1981 Census of Canada.
The Rounder, August 1978, p. 9.

Projected Future Population Growth:

At 2% per annum: 1986 - 616 1991 - 672

Population Structure by Age and By Gender - 1981



No. of Females - 270 No. of Males - 290

Footnotes

There is a fairly young population, with over 70% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells _X_ Other ________

Distribution:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_ Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None _X_

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes X No ____
Other: Yes ____ No X

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Fogo

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes No X

Size of Facility:

Staff: Doctors: Nurses:

Other: Services available in Fogo

2. Education

School located in community: Yes X No

Grades: Kindergarten to Grade 7

Size: N/A Classrooms: N/A Teachers: 4

3. Residential

(1) Number of occupied private dwellings: 130
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: 90, very good; 30 need minor repair; 15 need major repair
(4) Number of owned homes: 125
(5) Number of rented homes: 5
(6) Number of single detached homes: 125
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 4.3
(9) Dwellings heated by steam or hot water: 30
(10) Dwellings heated by hot air: 30
(11) Dwellings heated with stove or space heater: 65
(12) Dwellings heated by electric heat: 0
(13) Other: wood 5

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

1. N/A

E. COMMUNICATION LINKS

					Comments
Post Office	Yes	X	No		local
Television	Yes	X	No		CBC
Radio	Yes	X	No		
Telephone	Yes	X	No		Exchange Service
High Frequency Radio	Yes		No	X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Fogo Island Ferry	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: Fogo COMMUNITY: Seldom, Little Seldom

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	851 204	388 691	43 188		239
Commercial	133 441				
Industrial	223 680				
Government	156 649				
Street Lighting	13 365				
TOTAL	1 378 339	388 691	43 188		239

1982 ENERGY PROFILE

LOAD CENTER: Fogo COMMUNITY: Seldom, Little Seldom

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	3 064	15 033	1 627		1 933	21 657
Commercial	480					480
Industrial	805					805
Government	564					564
Street Lighting	48					48
TOTAL	4 962	15 033	1 627		1 933	23 554

6.2.6 REMOTE COMMUNITY ANALYSIS

Community Profile:	Stag Harbour
Status:	Unincorporated
Location:	Lat: 49° 35' N
	Long: 54° 17' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

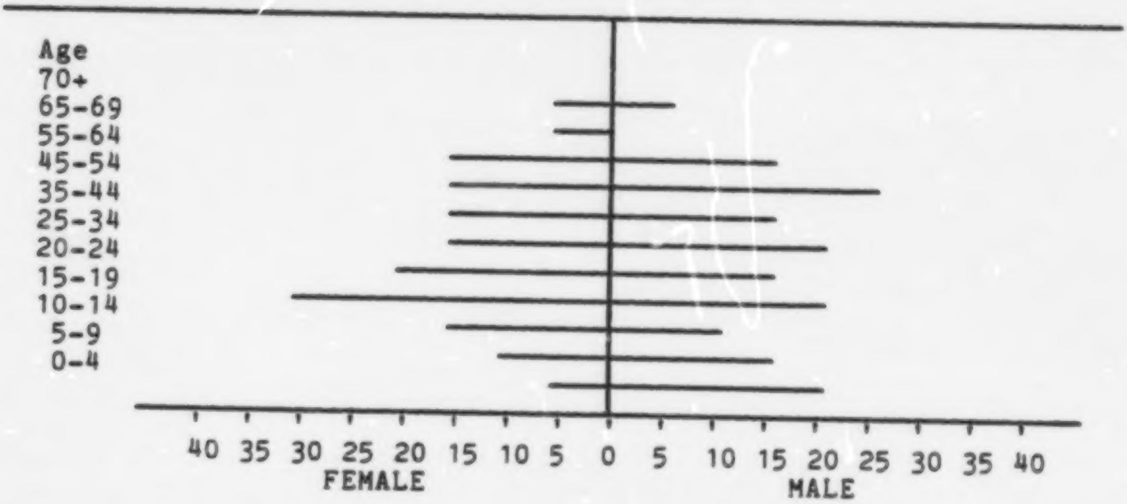
2. Demographics

1981 Population: 310

Projected Future Population Growth:

At 2% per annum: 1986 - 341 1991 - 372

Population Structure by Age and By Gender - 1981



No. of Females - 150 No. of Males - 160

Footnotes

There is a fairly young population, with 63% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells X Other ____________

Distribution:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized:	Yes ____	No X
Landfill Site Utilized:	Yes ____	No X
Other: open dump	Yes X	No ____

---

4. **Police Protection**

R.C.M.P.: Yes X No ____

Patrolled from: Fogo

---

5. **Fire Protection Organized**

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. **Health**

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. **Education**

School located in community: Yes X No ____

Grades: Kindergarten to Grade 7

Size: N/A Classrooms: N/A Teachers: 2

3. Residential

(1) Number of occupied private dwellings: 110
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 105
(5) Number of rented homes: 5
(6) Number of single detached homes: 100
(7) Number of single attached homes: 10
(8) Average number of persons per private household: 4.4
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange Service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Fogo Island Ferry	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: Fogo COMMUNITY: Stag Harbour

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	424 588	278 221	30 913		174
Commercial	18 909				
Industrial					
Government					
Street Lighting	297				
TOTAL	443 794	278 221	30 913		174

1982 ENERGY PROFILE

LOAD CENTER: Fogo COMMUNITY: Stag Harbour

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 529	10 760	1 165		1 407	14 861
Commercial	68					68
Industrial						
Government						
Street Lighting	1					1
TOTAL	1 598	10 760	1 165		1 407	14 930

6.2.7 REMOTE COMMUNITY ANALYSIS

Community Profile:	Tilting
Status:	Incorporated
Location:	Lat: 49° 42' N
	Long: 54° 04' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 427

Historic Population

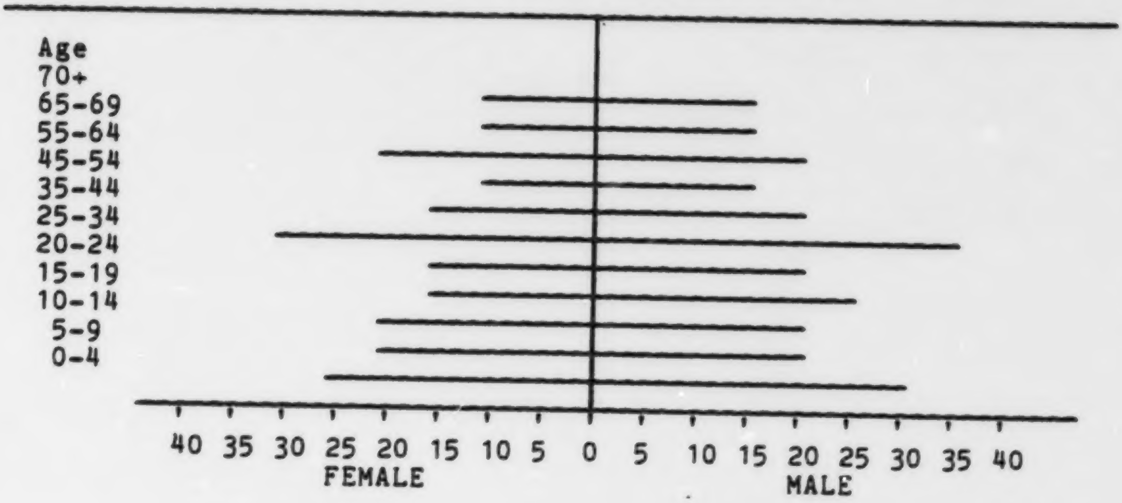
Year	Population	Increase	Growth %	Average Annual Growth %
1971	406			
1976	373	-33	-8.1	-1.6
1981	427	54	14.5	2.9

Source Note: 1981 Census of Canada.
The Rounder, August 1978, p. 9.

Projected Future Population Growth:

At 2% per annum: 1986 - 470 1991 - 512

Population Structure by Age and By Gender - 1981



No. of Females - 185 No. of Males - 242

Footnotes

There is a fairly young population, with 65% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ___ River ___ Wells _X_ Other ___

Distribution:

Pipe ___ Truck ___ Individual Systems _X_ None ___

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_ Standpipes ___

Treatment:

Sedimentation ___ Filtration ___ Chlorination ___
Fluoridation ___ None _X_

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized:	Yes X	No ____
Landfill Site Utilized:	Yes ____	No X
Other: open dump	Yes X	No ____

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Fogo

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: Facilities available in Fogo

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 7

Size: N/A Classrooms: N/A Teachers: 7

3. Residential

(1) Number of occupied private dwellings: 110
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: 105, very good; 5 need minor repairs
(4) Number of owned homes: 110
(5) Number of rented homes: 0
(6) Number of single detached homes: 105
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 3.8
(9) Dwellings heated by steam or hot water: 35
(10) Dwellings heated by hot air: 0
(11) Dwellings heated with stove or space heater: 75
(12) Dwellings heated by electric heat: 0
(13) Other: ____ 0

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

1. Fishery

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange Service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Fogo Island Ferry	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: Fogo COMMUNITY: Tilting

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	444 681	388 691	43 188		435
Commercial	47 232				
Industrial	18 240				
Government	15 744				
Street Lighting	3 663				
TOTAL	529 560	388 691	43 188		435

1982 ENERGY PROFILE

LOAD CENTER: Fogo COMMUNITY: Tilting

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 601	15 033	1 627		3 518	21 779
Commercial	170					170
Industrial	66					66
Government	57					57
Street Lighting	13					13
TOTAL	1 906	15 033	1 627		3 518	22 085

6.3 REMOTE COMMUNITY ANALYSIS

Load Centre: Little Bay Islands

Communities Serviced: Little Bay Islands

Status: Incorporated

Location: Lat: 49° 39' N
Long: 55° 47' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

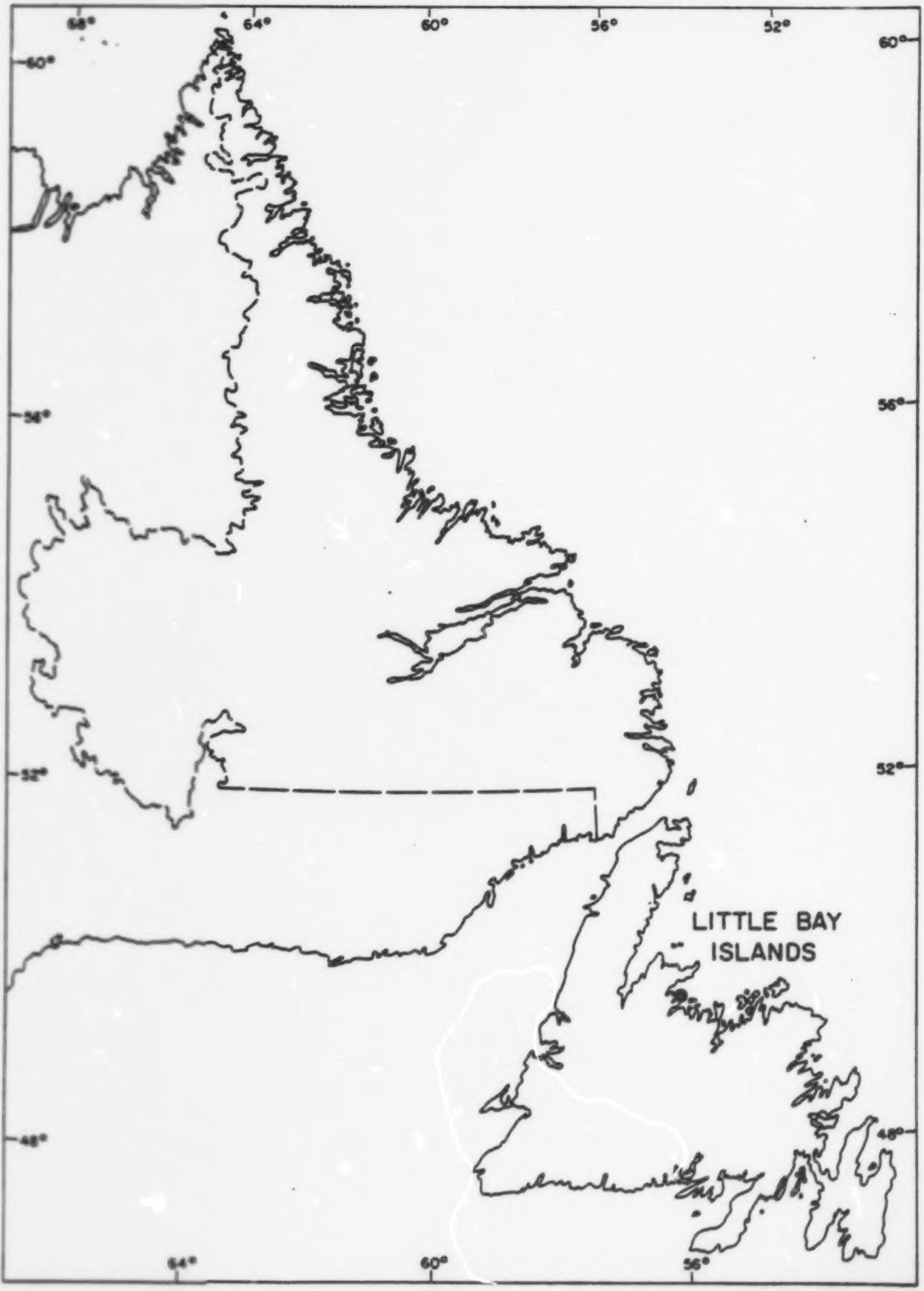
Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.


68°
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LITTLE BAY ISLANDS
64°
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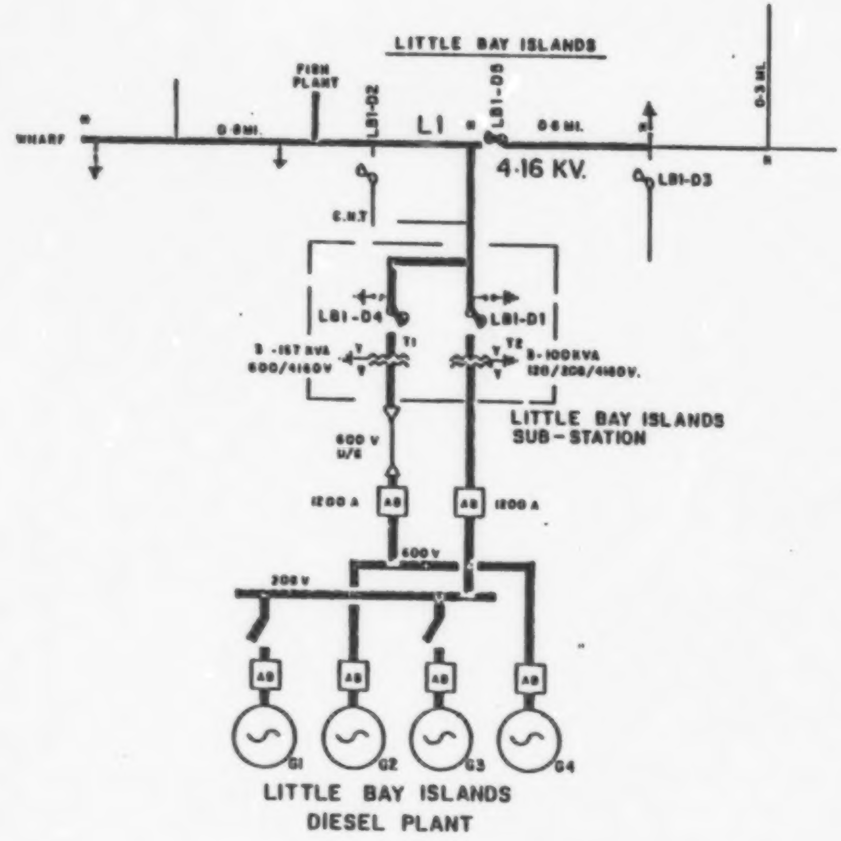


LITTLE BAY ISLANDS
WHARF
0.8MI.
FISH PLANT
LB1-D2
L1
LB1-D5
0.6MI.
0.3MI.
4.16 KV.
LB1-D3
C.N.T
LB1-D4
LB1-D1
T1
T2
3 - 167 KVA 600/4160V
3 - 100KVA 120/208/4160V.
LITTLE BAY ISLANDS SUB-STATION
600 V U/G
1200 A
1200 A
AB
600V
208V
G1
G2
G3
G4
LITTLE BAY ISLANDS DIESEL PLANT

APPROVED BY: W.F.R	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 of 1
DATE: 81/04/16	LITTLE BAY ISLANDS DISTRIBUTION SYSTEM	DWG. No. 116-1
REVISION No.: 4		

A. **History and Current Status**

1. N/A

2. **Demographics**

1981 Population: 407

Historic Population

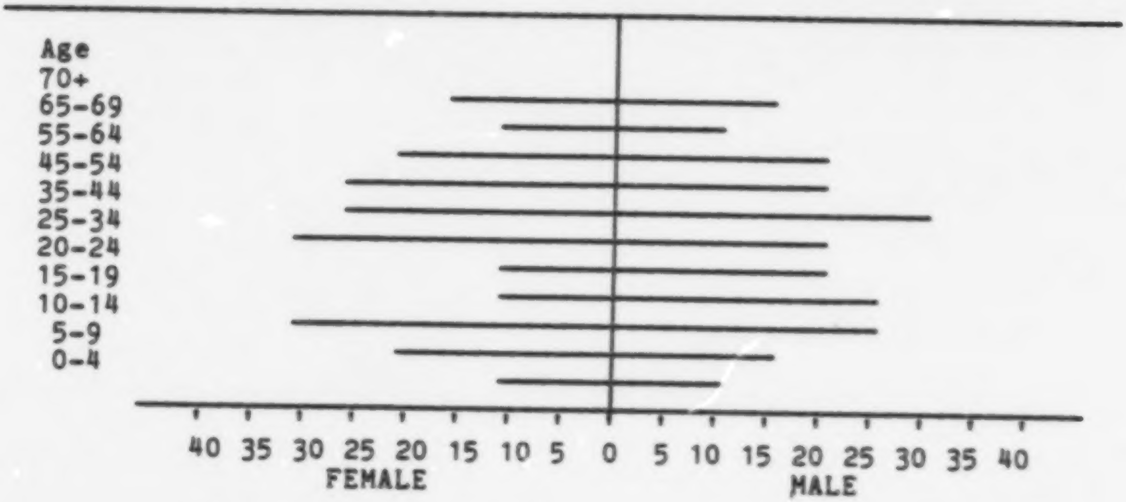
Year	Population	Increase	Growth %	Average Annual Growth %
1976	422			
1981	407	-15	-3.6	-0.7

Source Note: 1981 Census of Canada

Projected Future Population Growth:

1. At 2% per annum: 1986 - 448 1991 - 488

Population Structure by Age and By Gender - 1981



No. of Females - 200 No. of Males - 207

Footnotes

There is a fairly young population: Fifty-five percent are under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ____ Wells ____ Other ____________

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination X
Fluoridation ____ None ____

2. Sewage

Collection System:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____
Landfill Site Utilized: Yes ____ No X
Other: open dump Yes X No ____

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Springdale

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ______

Other: ______________

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 11

Size: N/A Classrooms: N/A Teachers: 5

---

3. Residential

(1) Number of occupied private dwellings: 115
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: 90, very good; 15 need minor repair; 10 need major repair
(4) Number of owned homes: 105
(5) Number of rented homes: 10
(6) Number of single detached homes: 100
(7) Number of single attached homes: 15
(8) Average number of persons per private household: 3.5
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 85
(11) Dwellings heated with stove or space heater: 20
(12) Dwellings heated by electric heat: 0
(13) Other: wood 10

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

1. Fishing and Trapping
2. Manufacturing

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Little Bay Islands Ferry	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
1 - 100 kw Budo with Allis Chalmers Generator
1 - 100 kw Cummins with Marathon Generator
1 - 300 kw Cat. with Cat. Generator
1 - 300 kw Cat. with Leroy Somer Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	337 743	385,809
Annual Fuel Cost	$91,377.00	$121,190.00
Cost per Litre	$0.27	$0.31
Cost Increase		15%

4. Electricity Demand - Historical and Predicted (mwh):

1980	1000	1985	1667
1981	1095	1986	1698
1982	1233	1987	1730
1983	1504	1988	1764
1984	1635		

5. **Peak Load Demand - Historical and Predicted (kw):**

1980	240	1985	370
1981	252	1986	375
1982	336	1987	381
1983	358	1988	387
1984	364		

ASSESSMENT OF RESOURCES - Little Bay Islands

Small Scale Hydro Potential

Available information indicates that there is no potential for small scale hydro development in this area.

Wood Resources

Little Bay Islands contain lands that have severe limitations that preclude the growth of commercial forests. Soils are shallow to bedrock, stony and low in fertility. Growths of less than 10 ft.^{3} per acre per year occur over 60% of the island, while growths of 11 to 30 ft.^{3} per acre per year occur over the remaining area. The dominant species is black spruce. Timber rights are owned by the Crown.

The Statistics Canada data base indicates that 29% of householders use wood as a primary heating source. This statistic appears high in light of the limited forest resources available and suggests wood supplies are being obtained from nearby islands or the mainland. The potential to increase wood utilization would therefore appear to be limited.

Peat Resources

The Provincial Government peat survey done in 1978 shows no significant reserves of fuel peat on Little Bay islands. However, on the nearby mainland in the Springdale to King's Point area approximately 700 hectares with a volume of 7 $M^3 \times 10^6$ are available as fuel peat. These reserves, if developed, will necessitate a minimum travel by boat and truck of 30 km.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

There is no potential for small scale hydro development or fuel peat utilization on Little Bay Islands. Wood resources are minimal and the potential for further exploitation of this resource is considered limited.

The data base on wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Little Bay Islands COMMUNITY: Little Bay Islands

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	689 109	347 776	38 642		761
Commercial	86 752				
Industrial	238 880				
Government	18 866				
Street Lighting	49 302				
TOTAL	1 082 909	347 776	38 642		761

1982 ENERGY PROFILE

LOAD CENTER: Little Bay Islands COMMUNITY: Little Bay Islands

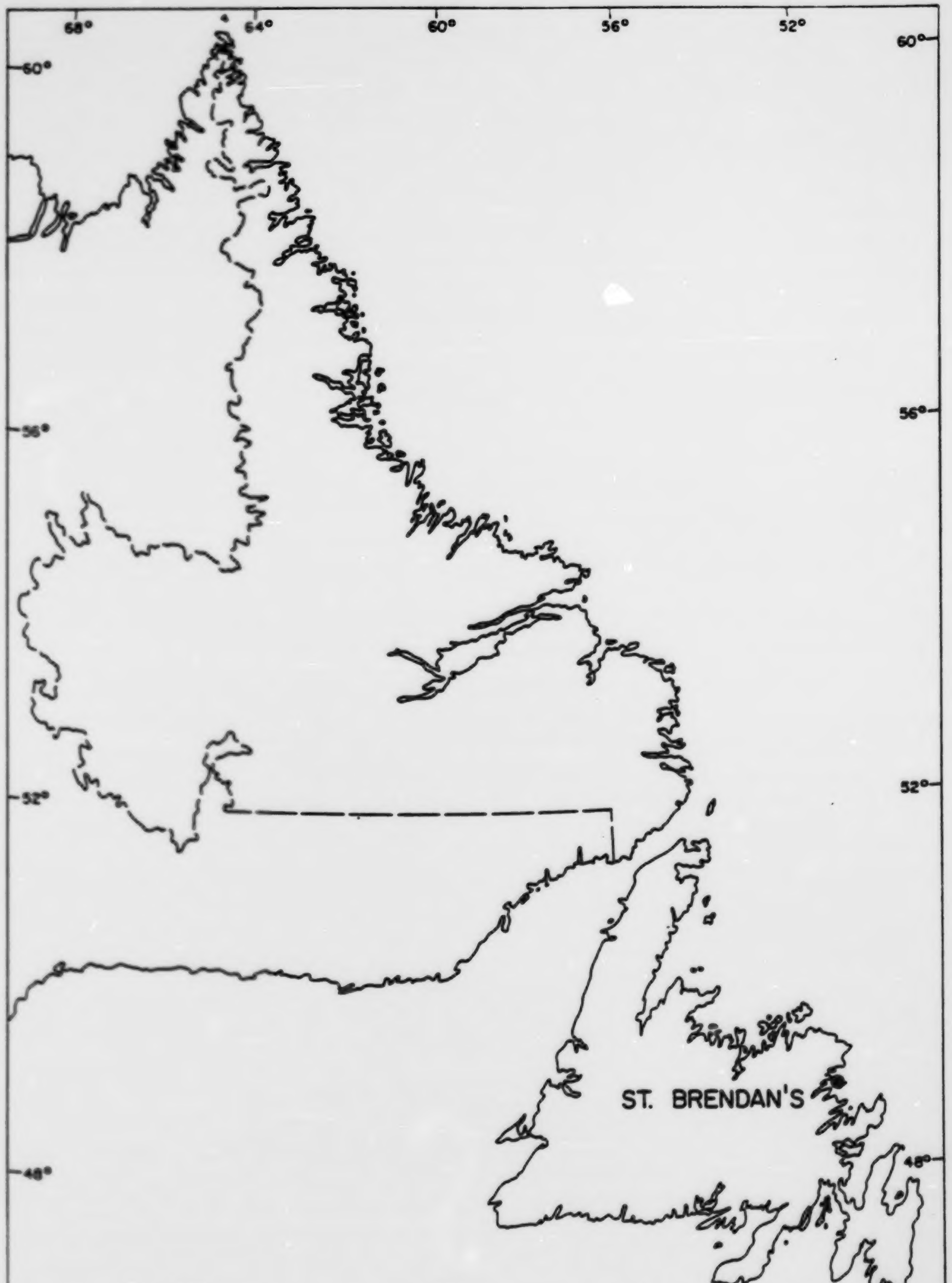
	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	2 481	13 450	1 456		6 155	23 542
Commercial	312					312
Industrial	860					860
Government	68					68
Street Lighting	177					177
TOTAL	3 898	13 450	1 456		6 155	24 959

6.4 REMOTE COMMUNITY ANALYSIS

Load Centre: St. Brendan's

Communities Serviced: Dock Cove, Hayward's Cove, Shalloway Cove, St. Brendan's

Comments: The diesel generating plant at St. Brendan's services the four communities referenced above. When such information is available, profiles will be presented for each community separately, beginning with Dock Cove.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ST. BRENDAN'S
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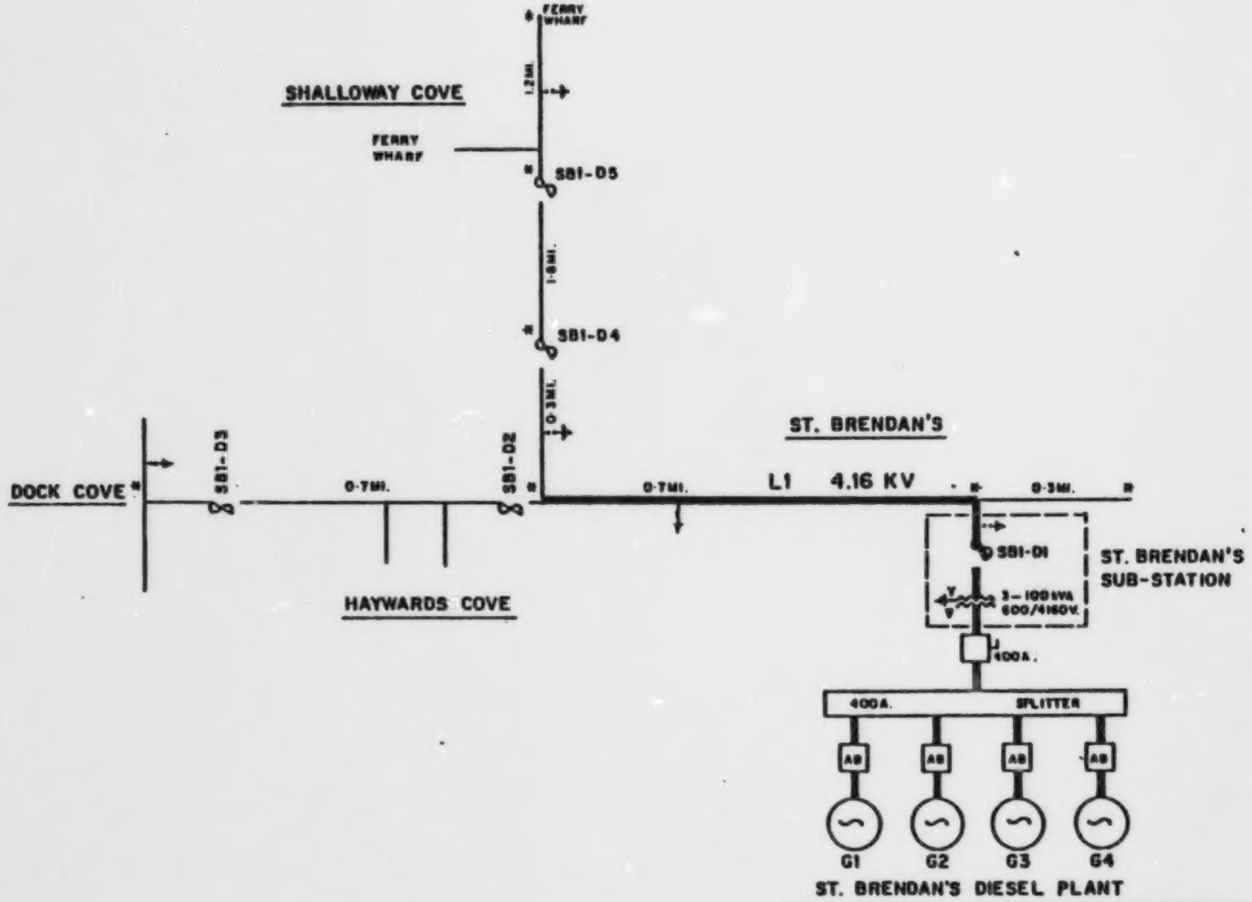

SHALLOWAY COVE
FERRY WHARF
FERRY WHARF
1.2MI.
SB1-D5
1.6MI.
SB1-D4
0.3MI.
ST. BRENDAN'S
DOCK COVE
SB1-D3
0.7MI.
SB1-D2
0.7MI.
L1 4.16 KV
0.3MI.
HAYWARDS COVE
SB1-D1
ST. BRENDAN'S SUB-STATION
3-100 kVA 600/4160V.
400A.
400A.
SPLITTER
AB
AB
AB
AB
G1
G2
G3
G4
ST. BRENDAN'S DIESEL PLANT

APPROVED BY: W.F.R	NEWFOUNDLAND AND LABRADOR HYDRO		SH 1 of 1
DATE: 83-05-19	ST. BRENDAN'S DISTRIBUTION SYSTEM		DWG. No.
REVISION No.: 5			III-1

old 131-1

6.4.1 REMOTE COMMUNITY ANALYSIS

Community Profile: Dock Cove

Status: Unincorporated

Location: Lat: 48° 51' N

Long: 53° 38' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

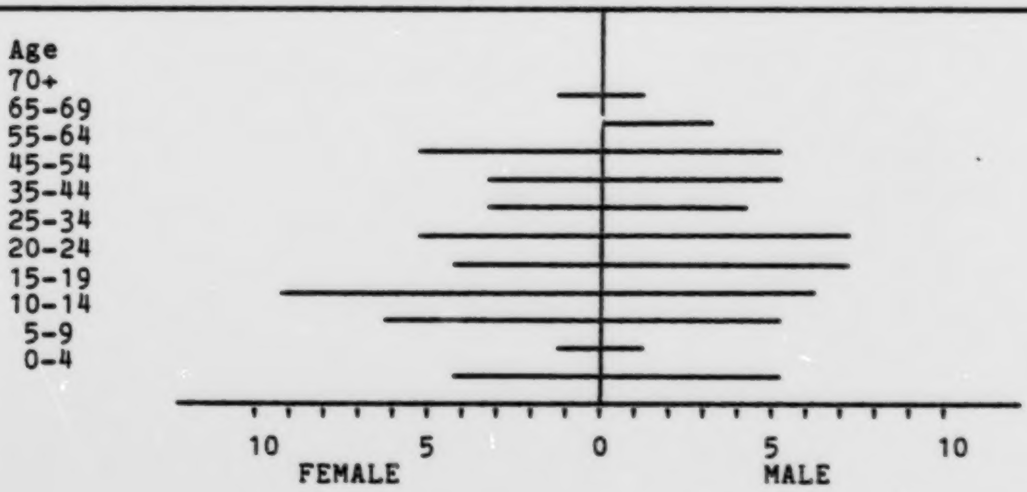
2. Demographics

1981 Population: 88

Projected Future Population Growth:

1. At 2% per annum: 1986 - 97 1991 - 106

Population Structure by Age and By Gender - 1981



No. of Females - 41 No. of Males - 47

Footnotes

There is a fairly young population, with 67% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake _____ River _____ Wells _ X _ Other ______________

Distribution:

Pipe _____ Truck _____ Individual Systems _ X _ None _____

Serving:

Government Buildings _ X _ Commercial Buildings _ X _ Residences _ X _ Standpipes ___

Treatment:

Sedimentation _____ Filtration _____ Chlorination _____
Fluoridation _____ None _ X _

---

2. Sewage

Collection System:

Pipe _____ Truck _____ Individual Systems _ X _ None _____

Serving:

Government Buildings _ X _ Commercial Buildings _ X _ Residences _ X _

Disposal:

Lagoon _ X _ Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized:	Yes _____	No _ X _
Landfill Site Utilized:	Yes _____	No _ X _
Other: open dump	Yes _ X _	No _____

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Glovertown

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ______

Other: ____________________

---

2. Education

School located in community: Yes ____ No X

Grades: ____________________

Size: ____ Classrooms: ____ Teachers: ____

---

3. Residential

(1) Number of occupied private dwellings: 20
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 20
(5) Number of rented homes: 0
(6) Number of single detached homes: 20
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 4.4
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

---

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes	No X	uses St. Brendan's
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	St. Brendan's Ferry	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

6.4.2 REMOTE COMMUNITY ANALYSIS

Community Profile: Hayward's Cove

Status: Unincorporated

Location: Lat: 48° 52' N

Long: 53° 39' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. **History and Current Status**

1. N/A

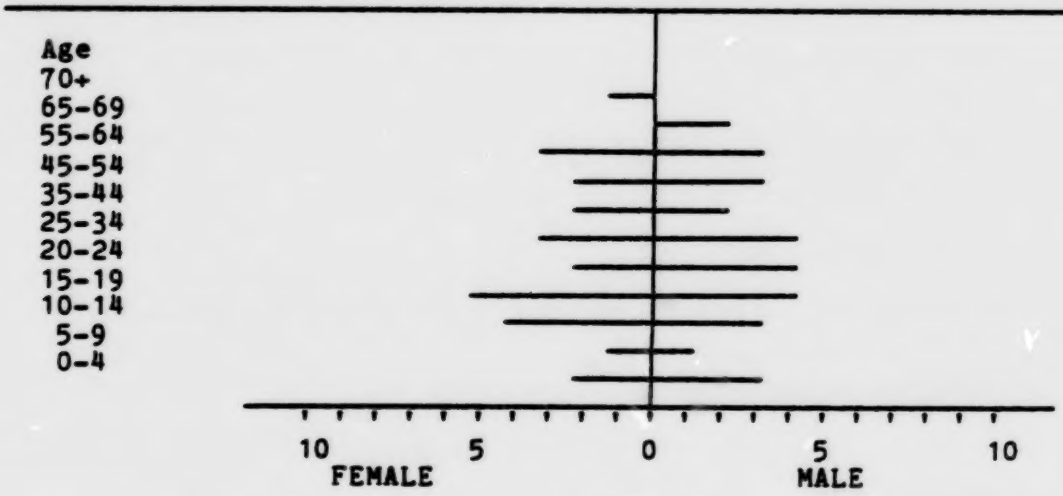
2. **Demographics**

1981 Population: 58

Projected Future Population Growth:

i. At 2% per annum: 1986 - 64 1991 - 70

Population Structure by Age and By Gender - 1981



No. of Females - 29 No. of Males - 29

Footnotes

There is a fairly young population. Sixty-seven percent is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells __X__ Other ____________

Distribution:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__ Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None __X__

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon __X__ Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes ____ No __X__
Landfill Site Utilized: Yes ____ No __X__
Other: open dump Yes __X__ No ____

---

4. Police Protection

R.C.M.P.: Yes X No

Patrolled from: Glovertown

---

5. Fire Protection Organized

Organized: Yes No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes No X

Size of Facility:

Staff: Doctors: Nurses:

Other:

---

2. Education

School located in community: Yes No X

Grades:

Size: Classrooms: Teachers:

---

3. Residential

(1) Number of occupied private dwellings: 13
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 13
(5) Number of rented homes: 0
(6) Number of single detached homes: 13
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 4.4
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: ____________ N/A

---

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes ____	No X	uses St. Brendan's
Television	Yes X	No ____	CBC and NTV
Radio	Yes X	No ____	Various signals
Telephone	Yes X	No ____	Exchange service
High Frequency Radio	Yes ____	No X	

Operated By: ____________

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	St. Brendan's Ferry	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

6.4.3 REMOTE COMMUNITY ANALYSIS

Community Profile: Shalloway Cove

Status: Unincorporated

Location: Lat: 48° 50' N

Long: 53° 41' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

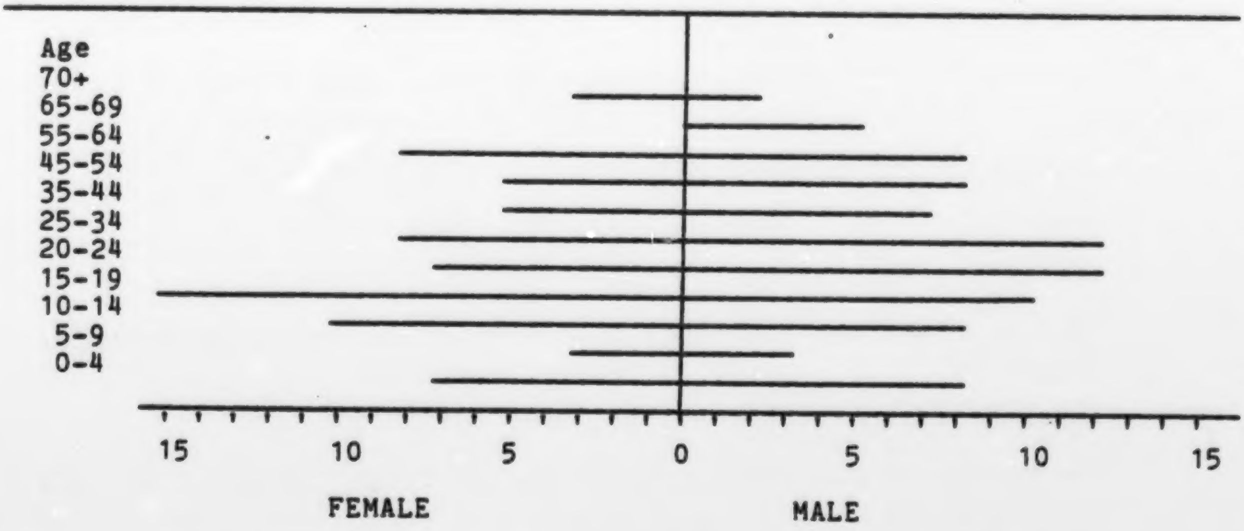
2. Demographics

1981 Population: 155

Projected Future Population Growth:

1. At 2% per annum: 1986 - 171 1991 - 186

Population Structure by Age and By Gender - 1981



No. of Females - 71 No. of Males - 84

Footnotes

There is a fairly young population. Sixty-seven percent is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. **Water**

Source:

Lake ____ River ____ Wells _X_ Other ____________

Distribution:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_ Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None _X_

---

2. **Sewage**

Collection System:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_

Disposal:

Lagoon _X_ Septic Tanks ___ Treatment Plant ___ None ___

---

3. **Solid Waste Disposal**

Garbage Collection Organized: Yes ____ No _X_
Landfill Site Utilized: Yes ____ No _X_
Other: _open dump_ Yes _X_ No ____

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Glovertown

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

2. Education

School located in community: Yes ____ No X

Grades:

Size: ____ Classrooms: ____ Teachers: ____

3. Residential

(1) Number of occupied private dwellings: 35
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 35
(5) Number of rented homes: 0
(6) Number of single detached homes: 35
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 4.4
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC and NTV
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	St. Brendan's Ferry	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

6.4.4 REMOTE COMMUNITY ANALYSIS

Community Profile: St. Brendan's

Status: Incorporated

Location: Lat: 48° 52' N
Long: 53° 40' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 468

Historic Population

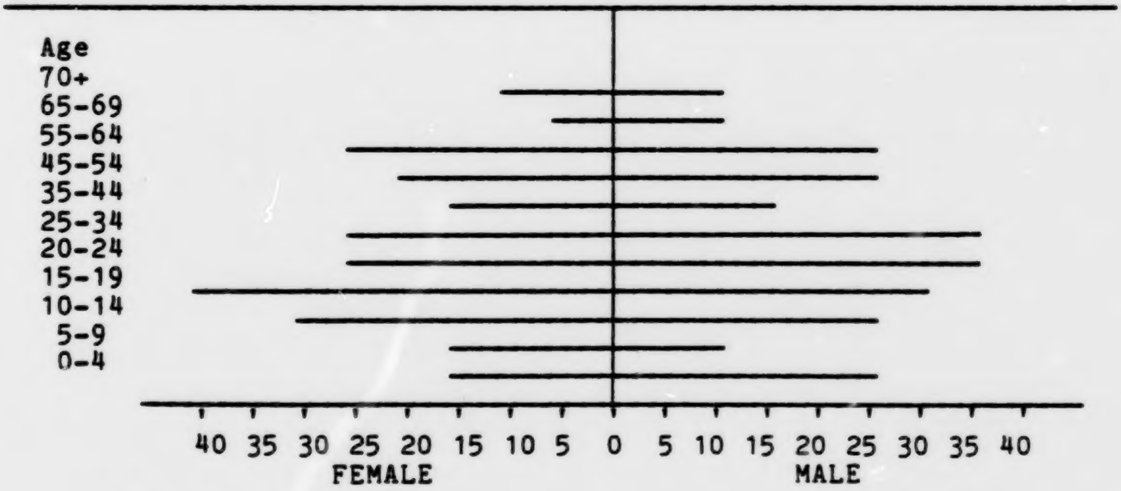
Year	Population	Increase	Growth %	Average Annual Growth %
1976	528			
1981	468	-60	-11.4	-2.3

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

1. At 2% per annum: 1986 - 515 1991 - 562

Population Structure by Age and By Gender - 1981



No. of Females - 218   No. of Males - 250

Footnotes

There is a fairly young population, with 66% under the age of 35.

Source Note: 1981 Census of Canada

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells X Other ____________

Distribution:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_

Disposal:

Lagoon _X_ Septic Tanks ____ Treatment Plant ____ None ____

3. Solid Waste Disposal

Garbage Collection Organized: Yes _X_ No ____
Landfill Site Utilized: Yes ____ No _X_
Other: _open dump_ Yes _X_ No ____

4. Police Protection

R.C.M.P.: Yes _X_ No ____

Patrolled from: _Glovertown_

5. Fire Protection Organized

Organized: Yes ____ No _X_

Equipment: _None_

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ______

Other: ____________________

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 11

Size: N/A Classrooms: N/A Teachers: 10

3. Residential

(1) Number of occupied private dwellings: 105
(2) Number of houses with sewer and water: ______
(3) Housing Condition: 95, very good; 5 need minor repair; 5 need major repair
(4) Number of owned homes: 100
(5) Number of rented homes: 5
(6) Number of single detached homes: 105
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 4.4
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 20
(11) Dwellings heated with stove or space heater: 85
(12) Dwellings heated by electric heat: 0
(13) Other: ____________________ 0

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC and NTV
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	St. Brendan's Ferry	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
1 - 100 kw Deutz with Tamper Generator
1 - 250 kw Cat. with B.B.C. Generator
1 - 250 kw Cat. with Tamper Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	260,239	290,221
Annual Fuel Cost	$80,887.00	$123,124.00
Cost per Litre	$0.31	$0.42
Cost Increase		35%

4. Electricity Demand - Historical and Predicted (mwh):

1980	713	1985	980
1981	723	1986	1050
1982	807	1987	1124
1983	855	1988	1205
1984	915		

5. Peak Load Demand - Historical and Predicted (kw):

1980	194	1985	271
1981	207	1986	291
1982	228	1987	313
1983	235	1988	337
1984	252		

H. ASSESSMENT OF RESOURCES - St. Brendan's Load Centre - All Communities

Small Scale Hydro Potential

Available information shows that there is no potential for small scale hydro development in St. Brendan's.

Wood Resources

Cottle Island (St. Brendan's) contains lands that have severe limitations which preclude the growth of commercial forests. Soils are shallow to bedrock, stony and low in fertility. Growths of less than 10 $ft.^3$ per acre per year occur over about 60% of the island, while growth of 11 to 30 $ft.^3$ per acre per year occurs over the remaining 40%. The dominant species is black spruce. Timber rights are owned by the Crown.

The Statistics Canada data base shows that only 9.5% of households use wood as a primary heating fuel, and the above information would indicate that the potential for increased use of this resource is quite limited.

Peat Resources

In 1978 the Government of Newfoundland and Labrador carried out an inventory of fuel peat resources in northeastern Newfoundland. This inventory shows no potential fuel peat resources on Cottle Island or nearby mainland areas.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

With no potential for small scale hydro or fuel peat development, and with limited wood resources, the potential for alternative energy developments in St. Brendan's appears restricted.

The data base on wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: St. Brendan's COMMUNITY: St. Brendan's, Dock Cove, Hayward's Cove, Shalloway Cove

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	574 677	310 953	34 550		174
Commercial	28 293				
Industrial					
Government	30 372				
Street Lighting	22 499				
TOTAL	655 841	310 953	34 550		174

1982 ENERGY PROFILE

LOAD CENTER: St. Brendan's COMMUNITY: St. Brendan's, Dock Cove, Hayward's Cove, Shalloway Cove

---

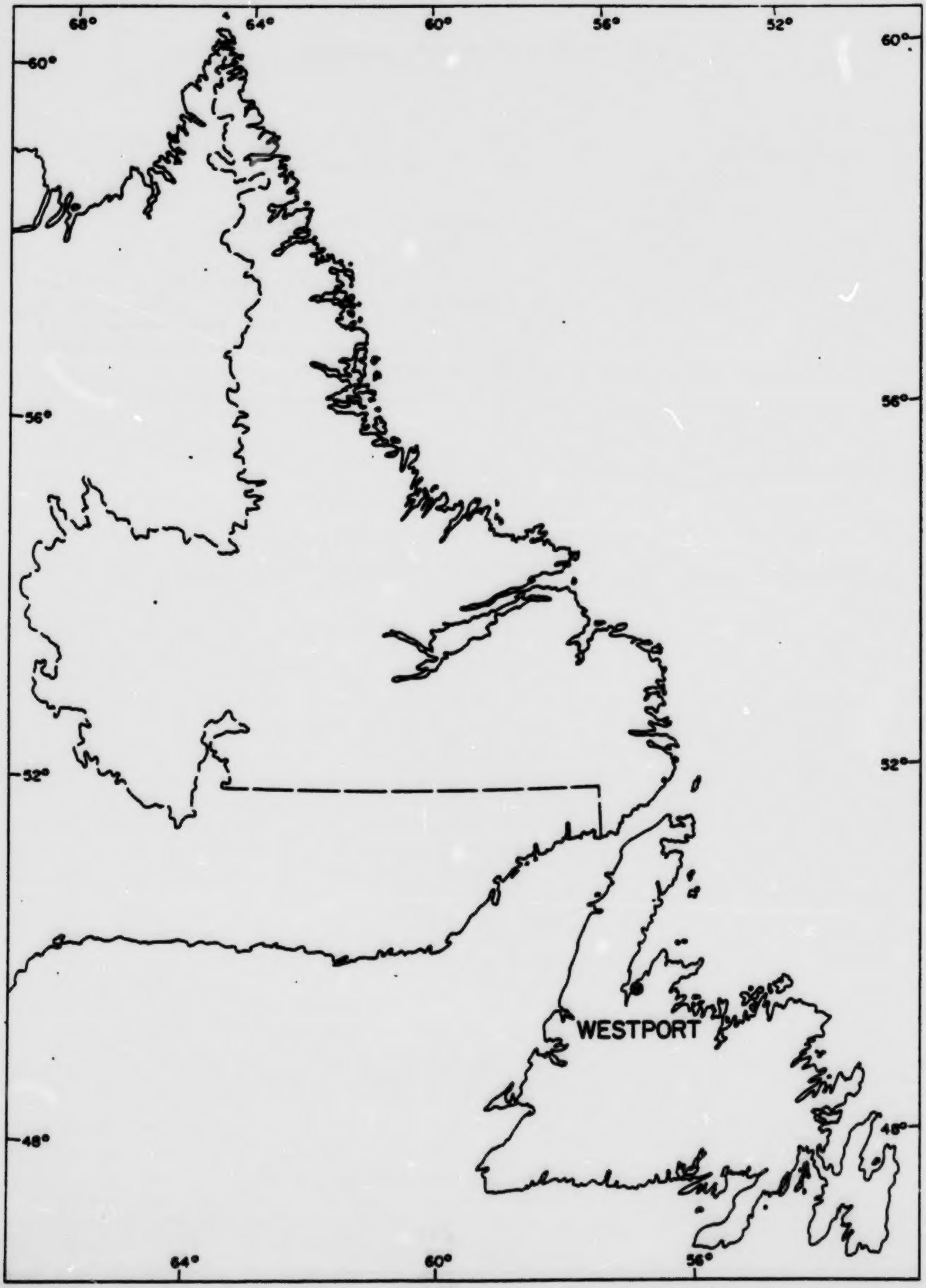
	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	2 069	12 026	1 302		1 407	16 804
Commercial	102					102
Industrial						
Government	109					109
Street Lighting	81					81
TOTAL	2 361	12 026	1 302		1 407	17 096

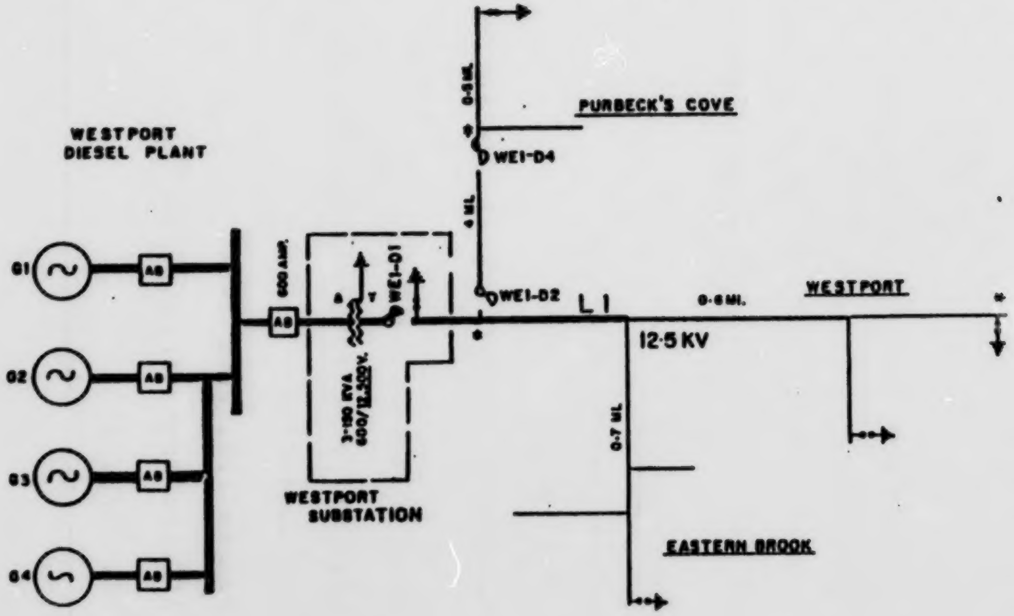
6.5 REMOTE COMMUNITY ANALYSIS

Load Centre: Westport

Communities Serviced: Purbeck's Cove, Westport

Comments: The diesel plant at Westport services the small community of Purbeck's Cove as well. Profiles for the two communities will be presented separately, beginning with Purbeck's Cove.


68°
64°
60°
56°
52°
60°
60°
56°
56°
52°
52°
48°
48°
WESTPORT
64°
60°
56°


WESTPORT
DIESEL PLANT
G1
G2
G3
G4
AB
600 AMP.
3-150 KVA
600/12,500V.
WE1-D1
WESTPORT
SUBSTATION
WE1-D2
4 MI.
WE1-D4
0-5 MI.
PURBECK'S COVE
L1
12·5 KV
0·6 MI.
WESTPORT
0·7 MI.
EASTERN BROOK

APPROVED BY: W.F.R.	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 OF 1
DATE: 81/10/14	WESTPORT DISTRIBUTION SYSTEM	DWG No 108-1
REVISION No.: 0		

6.5.1 REMOTE COMMUNITY ANALYSIS

Community Profile: Purbeck's Cove

Status: Unincorporated

Location: Lat: 49° 45' N

Long: 56° 39' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 61

Historic Population

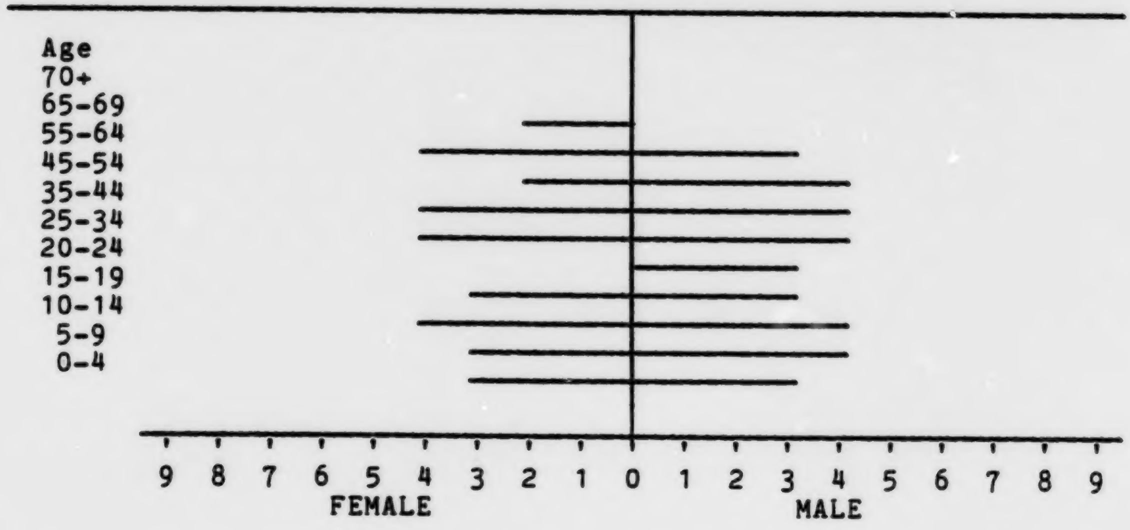
Year	Population	Increase	Growth %	Average Annual Growth %
1971	73			
1976	90	17	23.3	4.7
1981	61	-29	-32.2	-6.4

Source Note: 1981 Census of Canada.
The Rounder, January 1979, p. 21.

Projected Future Population Growth:

1. At 2% per annum: 1985 - 67 1991 - 73

Population Structure by Age and By Gender - 1981



No. of Females - 29 No. of Males - 32

Footnotes

Although the total population is small, 62% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells X Other ____

Distribution:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe ___ Truck ___ Individual Systems X None ___

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ___ Treatment Plant ___ None ___

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ___
Landfill Site Utilized: Yes X No ___
Other: Yes ___ No X

---

4. Police Protection

R.C.M.P.: Yes X No ___

Patrolled from: Baie Verte

---

5. Fire Protection Organized

Organized: Yes ___ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 8

Size: N/A Classrooms: N/A Teachers: 2

---

3. Residential

(1) Number of occupied private dwellings: 15
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 14
(5) Number of rented homes: 1
(6) Number of single detached homes: 14
(7) Number of single attached homes: 1
(8) Average number of persons per private household: 4.2
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: ____ N/A

---

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

					Comments
Post Office	Yes		No	X	One at Westport
Television	Yes	X	No		CBC
Radio	Yes	X	No		Various signals
Telephone	Yes	X	No		Exchange service
High Frequency Radio	Yes		No	X	

Operated By: ____

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

1982 ENERGY PROFILE

LOAD CENTER: Westport COMMUNITY: Purbeck's Cove

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	78 552	40 915	4 546		109
Commercial	3 137				
Industrial					
Government					
Street Lighting					
TOTAL	81 689	40 915	4 546		109

1982 ENERGY PROFILE

LOAD CENTER: Westport COMMUNITY: Purbeck's Cove

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	283	1 582	171		882	2 918
Commercial	11					11
ıdustrial						
Government						
Street Lighting						
TOTAL	294	1 582	171		882	2 929

6.5.2 REMOTE COMMUNITY ANALYSIS

Community Profile:	Westport
Status:	Incorporated
Location:	Lat: 49° 47' N
	Long: 56° 38' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.

A. History and Current Status

1. Westport is White Bay's oldest community. It was once a booming fishing centre and was the location for White Bay's first church, first magistrate and first police station. Its economic base is centered around the fishery and forestry.

2. Demographics

1981 Population: 467

Historic Population

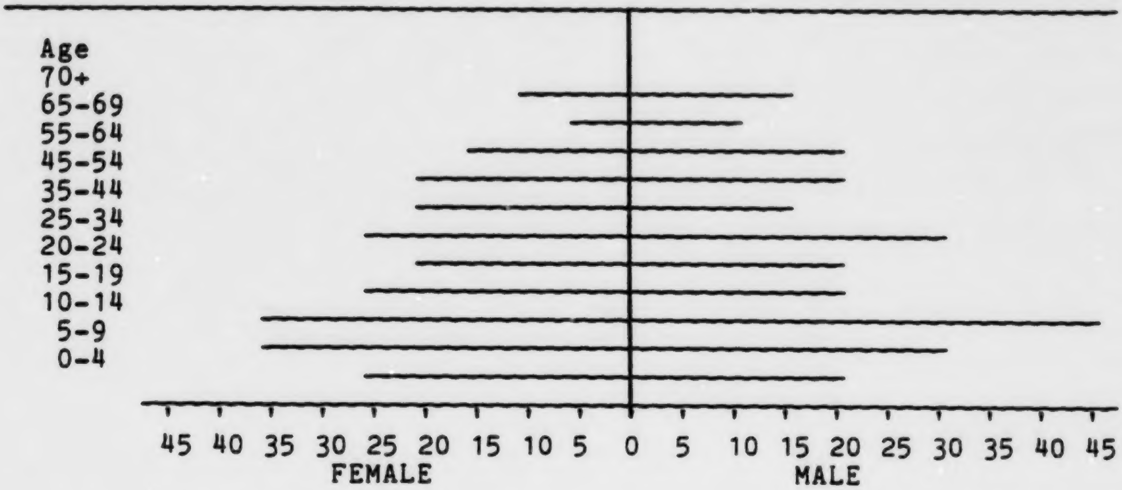
Year	Population	Increase	Growth %	Average Annual Growth %
1971	416			
1976	464	48	11.5	2.3
1981	467	3	0.6	0.1

Source Note: 1981 Census of Canada.
The Rounder, January 1979, p. 21.

Projected Future Population Growth:

1. At 2% per annum: 1986 - 514 1991 - 560

Population Structure by Age and By Gender - 1981



No. of Females - 230 No. of Males - 237

Footnotes

There is a fairly young population, with 68% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. **Water**

Source:

Lake X River ____ Wells ____ Other ____________

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems __X__ None ____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon __X__ Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes __X__ No ____
Landfill Site Utilized: Yes __X__ No ____
Other: Yes ____ No __X__

---

4. Police Protection

R.C.M.P.: Yes __X__ No ____

Patrolled from: Baie Verte

---

5. Fire Protection Organized

Organized: Yes ____ No __X__

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 10

Size: N/A Classrooms: N/A Teachers: 9

---

3. Residential

(1) Number of occupied private dwellings: 55
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: 40, very good; 15 need minor repair; 5 need major repair
(4) Number of owned homes: 50
(5) Number of rented homes: 5
(6) Number of single detached homes: 55
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 4.7
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 10
(11) Dwellings heated with stove or space heater: 30
(12) Dwellings heated by electric heat: 5
(13) Other: wood 10

---

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

1. Forestry
2. Fishery

E. COMMUNICATION LINKS

					Comments
Post Office	Yes	X	No		local
Television	Yes	X	No		CBC
Radio	Yes	X	No		various signals
Telephone	Yes	X	No		exchange service
High Frequency Radio	Yes		No	X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Not Available	
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 1 - 60 kw Cat. with Tamper Generator
3 - 250 kw Cat. with Tamper Generators

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	357,139	359,339
Annual Fuel Cost	$90,250.00	$106,366.00
Cost per Litre	$0.25	$0.30
Cost Increase	-	20%

4. Electricity Demand - Historical and Predicted (mwh):

1980	1026	1985	1085
1981	1029	1986	1108
1982	1009	1987	1133
1983	1038	1988	1359
1984	1061		

5. Peak Load Demand - Historical and Predicted (kw):

1980	279	1985	329
1981	312	1986	336
1982	306	1987	345
1983	314	1988	353
1984	321		

H. ASSESSMENT OF RESOURCES - Westport

Small Scale Hydro Potential

There are five possible sites within approximately 7 km. of the nearest transmission line. Three of these are located on Wild Cove Brook. The largest of these is located at the bridge and has a nominal capacity of 645 kw. through a head of approximately 12 M. It is located 5.8 km. from the nearest transmission line. Another site below the bridge has a nominal capacity of 550 kw. through a head of approximately 7 M. This site is approxiamtely 4.6 km. from the nearest transmission line. The third site, above the bridge, is located 6.6 km. from the nearest transmission line and has a nominal capacity of 370 kw. through a head of approximately 10 M.

There are two further sites. One, located on East Brook, 2.1 km. from the nearest transmission line, has a nominal capacity of 260 kw. through a head of approximately 37 M. The other site is located on Purbeck's Brook, 4.8 km. from the nearest transmission line. It has a nominal capacity of 210 kw. through a head of approximately 14 M.

Wood

The immediate Westport area contains lands that have severe limitations to the growth of commercial forests. These include shallow soil, bedrock, stoniness and low fertility. About 60% of the land can only support growth of 11 to 30 $ft.^3$ per acre per year, while 20% can support growths of 31 to 50 $ft.^3$ per acre per year. The remaining 20% can support less than 10 $ft.^3$ per acre per year. In the area immediately surrounding Purbeck's Cove extending up Purbeck's Brook and into Wild Cove Brook about 5 km. east of Westport forest growth improves. This area contains lands that have severe limitations to commercial growths of timber due to shallow stony soils and low fertility. However, growths of 31 to 50 $ft.^3$ per acre per year can be expected over 60 to 70% of that area, and of 51 to 70 $ft.^3$ per acre per year over 30% of the area around Wild Cove Brook. Black spruce and balsam fir are the dominant species; however, birch and tamarack are also frequently found. The timber rights in this area are owned by Bowater Newfoundland Limited.

The Statistics Canada data base indicates that the number of householders using wood as a primary heating fuel ranges from 35% in Purbeck's Cove to 65% in the large community of Westport. The potential to increase the use of wood as a primary or secondary fuel requires further study.

Peat Resources

The Provincial Government's fuel peat survey in 1978 did not single out the Westport area for significant reserves; however, several bogs exist about 5 km. east of Purbeck's Cove that may have potential as a source of fuel. Access roads would have to be built to these reserves.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

Small scale hydro development appears to be the most promising energy alternative for the Westport area. The partial development of a site on Wild Cove Brook near the bridge would cost between $1.0 and $1.5 million, with an Annual Equivalent Cost of energy of $0.20 per kwh. This compares favourably with diesel generated electricity at $0.25 per kwh.

In addition to small scale hydro developments, the potential exploitation of fuel peat resources and increased utilization of wood resources are options that warrant further investigation.

The data base on wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Westport COMMUNITY: Westport

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	678 696	122 744	13 638		1 196
Commercial	31 192				
Industrial					
Government	25 521				
Street Lighting	54 696				
TOTAL	790 105	122 744	13 638		1 196

1982 ENERGY PROFILE

LOAD CENTER: Westport **COMMUNITY:** Westport

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	2 443	4 747	514		9 673	17 377
Commercial	112					112
Industrial						
Government	92					92
Street Lighting	197					197
TOTAL	2 844	4 747	514		9 673	17 778

7.0 Profiles and Assessments by Load Centre and Community - Southern Newfoundland

7.1 REMOTE COMMUNITY ANALYSIS

Load Centre: Burgeo

Communities Serviced: Burgeo

Status: Incorporated

Location: Lat: 47° 37' N

Long: 57° 37' W

Sources of Information:

Publications and Articles

Li, Peter, Provincial Planning Office, Department of Municipal Affairs, "The Municipal Plan of the Town of Burgeo 1981-1991 Background Report," January 1981.

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

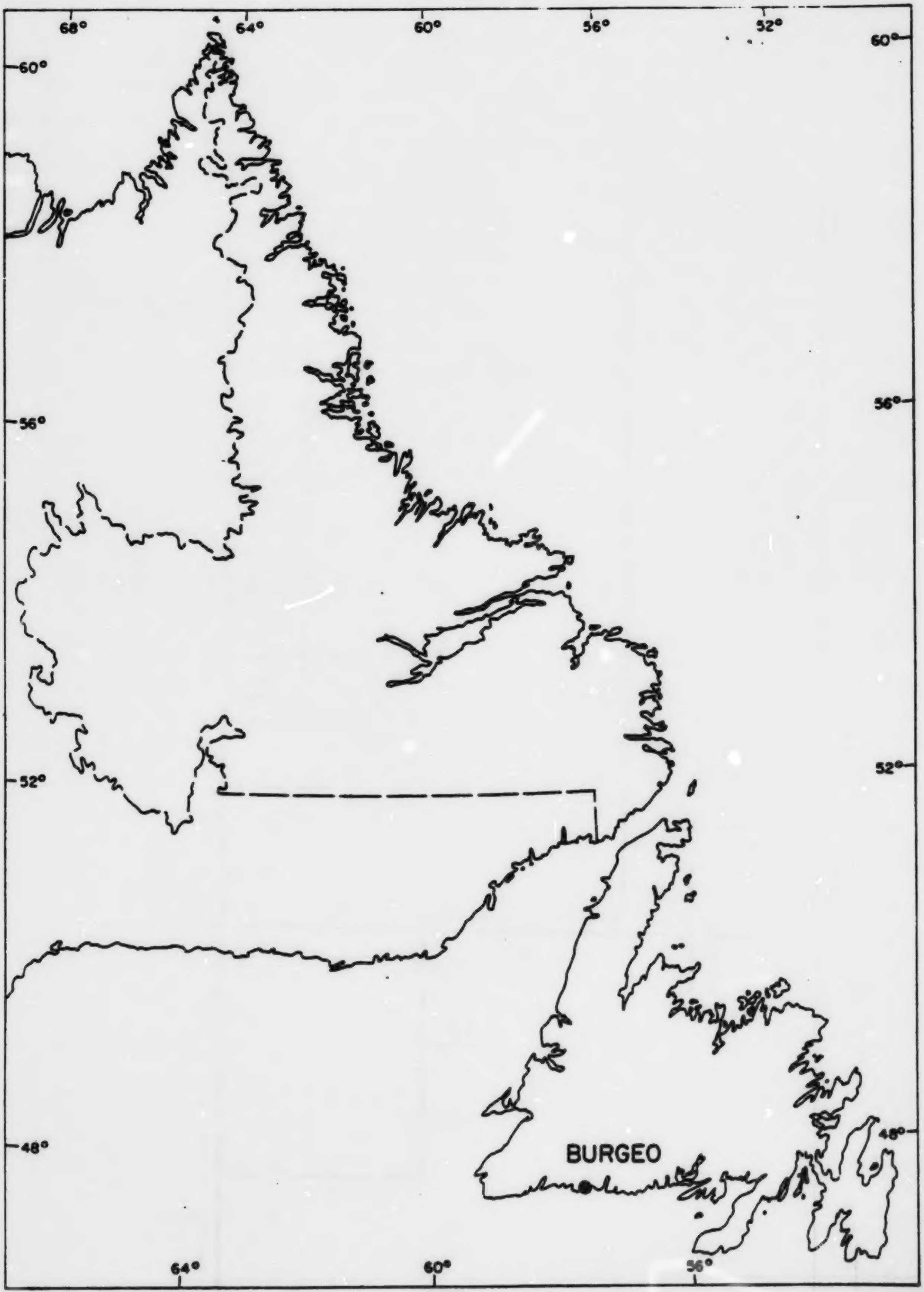
Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.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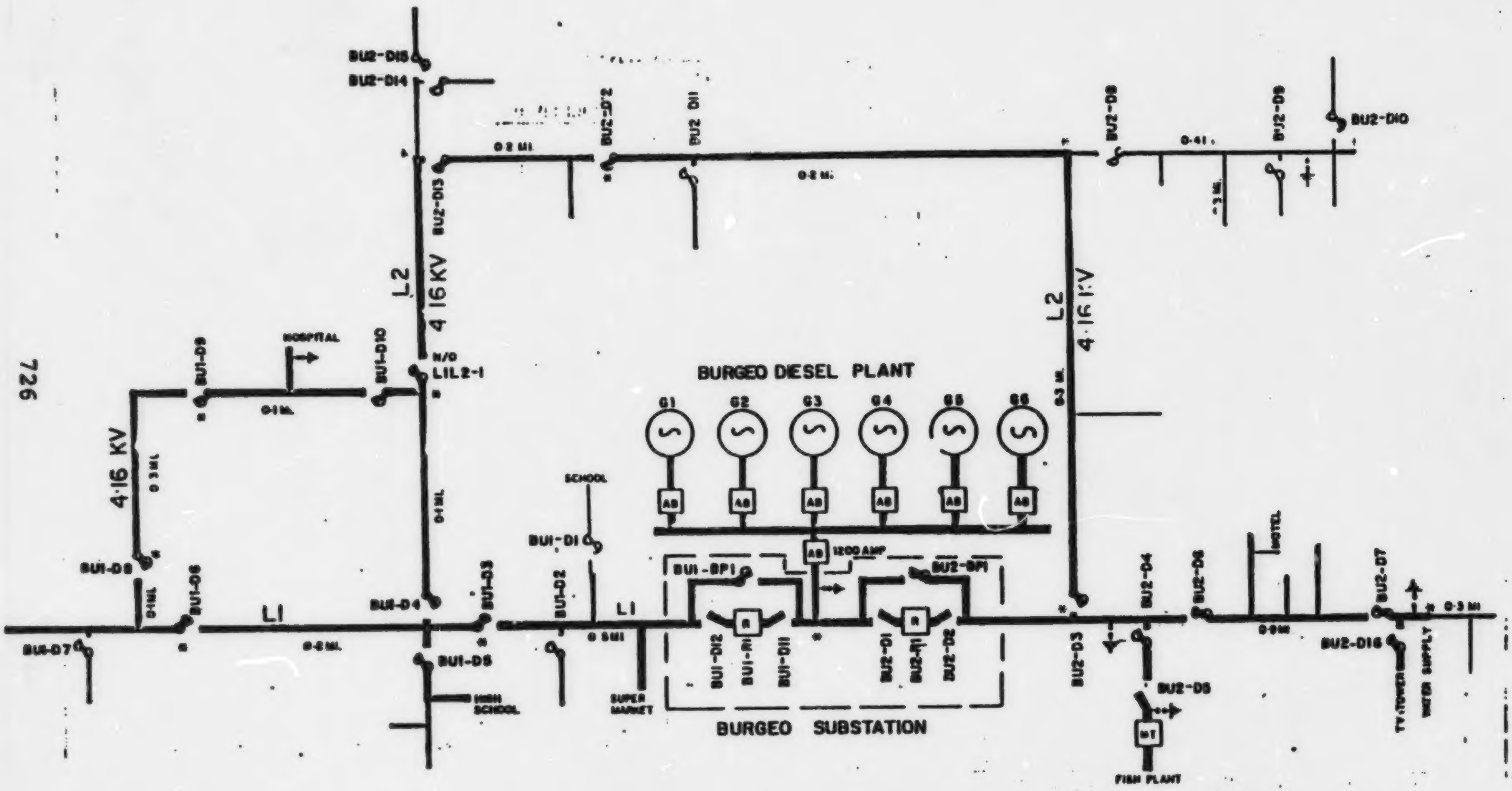
BU2-D15
BU2-D14
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BU2-D9
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0.2 MI.
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.3 MI.
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HOSPITAL
BU1-D9
BU1-D10
N/O
LIL2-1
0.1 MI.
4.16 KV
0.3 MI.
0.1 MI.
BURGEO DIESEL PLANT
G1
G2
G3
G4
G5
G6
AB
1200 AMP
SCHOOL
BU1-D1
BU1-D8
BU1-D6
BU1-D7
L1
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BU1-D4
BU1-D3
BU1-D5
HIGH SCHOOL
BU1-D2
L1
0.5 MI.
SUPER MARKET
BU1-BP1
BU2-BP1
R
BU1-D12
BU1-R1
BU1-D11
BU2-D1
BU2-R1
BU2-D2
BURGEO SUBSTATION
BU2-D3
BU2-D4
BU2-D5
MT
FISH PLANT
BU2-D6
HOTEL
0.2 MI.
BU2-D7
BU2-D16
TV TOWER
WATER SUPPLY
0.3 MI.

APPROVED BY: W.F.R.	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 of 1
DATE: 83-01-01	BURGEO DISTRIBUTION SYSTEM	DWG. No. 504-1
REVISION No.: 0		

A. History and Current Status

1. Burgeo was originally a French fishing station. It was usually vacated in the winter; however, eventually some French fishermen did stay behind to live there year around. Later, the French were joined by some Irish fishermen and Mic Mac Indians, and together they built a permanent community.

In 1835 J. B. Cox established the first store in Burgeo to buy fish locally. This establishment was taken over in 1840 by Messrs. Newman, Hunt and Company. The new firm exported fish to Portugal, Spain and the United States.

Burgeo was isolated from the rest of the province until 1979, when it was connected to the provincial highway system of western Newfoundland. The economic base of the community of Burgeo is the fishery.

2. Demographics

1981 Population: 2,504

Historic Population

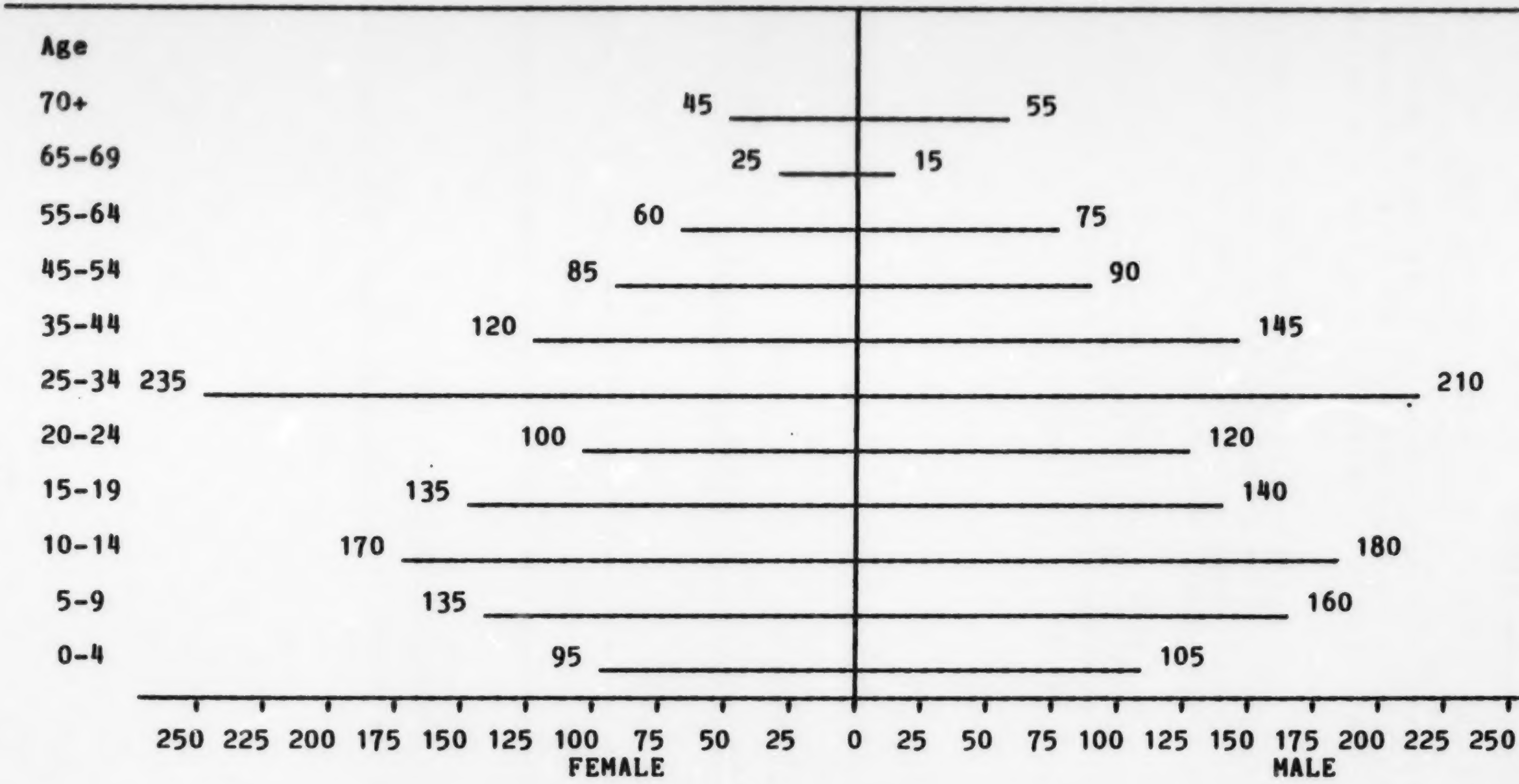
Year	Population	Increase	Growth %	Average Annual Growth %
1976	2,474			
1981	2,504	30	1.2	0.2

Source note: 1981 Census of Canada.

Projected Future Population Growth:

1. At 2% per annum: 1986 - 2,754 1991 - 3,005

Population Structure by Age and By Gender - 1981



No. of Females - 1,204

No. of Males - 1,300

Footnotes

Fifty-four percent of the population is under the age of 25.
This shows potential for sustained population growth.

Source Note: 1981 Census of Canada

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ___ Wells ___ Other ___

Distribution:

Pipe X Truck ___ Individual Systems ___ None ___

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ___ Filtration ___ Chlorination X

Fluoridation ___ None ___

---

2. Sewage

Collection System:

Pipe X Truck ___ Individual Systems ___ None ___

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ___ Treatment Plant ___ None ___

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ___

Landfill Site Utilized: Yes X No ___

Other: Yes ___ No X

4. **Police Protection**

R.C.M.P.: Yes X No ____

Patrolled from: Burgeo

---

5. **Fire Protection Organized**

Organized: Yes X No ____

Equipment: hydrants

C. COMMUNITY FACILITIES

1. **Health**

Clinic in Community: Yes X No ____

Size of Facility: 1,143.1 M^2

Staff: Doctors: N/A Nurses: N/A

Other: total staff - 46

---

2. **Education**

School located in community: Yes 2 No ____

Grades: Kindergarten to Grade 6; Grade 7 to Grade 11

Size: N/A Classrooms: N/A Teachers: 15/23

3. Residential

(1) Number of occupied private dwellings: 590
(2) Number of houses with sewer and water: all have sewer and water
(3) Housing Condition: 515, very good; 65 need minor repair; 20 need major repair
(4) Number of owned homes: 545
(5) Number of rented homes: 45
(6) Number of single detached homes: 545
(7) Number of single attached homes: 20
(8) Average number of persons per private household: 4.2
(9) Dwellings heated by steam or hot water: 85
(10) Dwellings heated by hot air: 320
(11) Dwellings heated with stove or space heater: 190
(12) Dwellings heated by electric heat: 0
(13) Other: 0

---

4. Community/Institutional/Commercial/Industrial Buildings

Federal Building
Recreational Centre
Food Centre
Scotia Bank
V. Hare Ltd.
J. Green's Store
Meade's Hennery
Sea Side Mini Mart
Handy Andy
Sea View Restaurant
Wander Inn Lounge
Hiscock's Novelty Store
Quinto Drugs
Club 3 Ltd.
Colliers Clothing
James' Store
Gloria Hare Beauty Parlor

National Sea Fish Plant
Motel
Coastal Food Centre
Burgeo Fish Industries
Reg Webb Ltd.
Burgeo Bakery
Nathan Rose General Dealer
Arthur Cossar & Son Groceries
Strickland's Store Groceries
Simeon Spencer Groceries
Scott & Davies Garage
Heber Parsons' Groceries
Rupert Strickland Groceries
Elmer Strickland Groceries
Theo. Anderson Trucking
Warren's Barber Shop

D. ECONOMIC ACTIVITIES

1. Fishery

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC plus others from satellite dish
Radio	Yes X	No	wide range from satellite dish
Telephone	Yes X	No	telephone exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
2 - 500 kw Lister with Tamper Generators
1 - 1000 kw Lister with Tamper Generator
1 - 1000 kw Ruston with Tamper Generator
1 - 920 kw Detroit with Elec. Prod. Generator
1 - 850 kw Cat. with Tamper Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	3,005,092	3,261,224
Annual Fuel Cost	$854,595.00	$1,114,418.00
Cost per Litre	$0.28	$0.34
Cost Increase		21%

4. Electricity Demand - Historical and Predicted (mwh):

1980	10,513	1985	11,681
1981	10,161	1986	11,863
1982	11,143	1987	--
1983	11,367	1988	--
1984	11,498		

5. Peak Load Demand - Historical and Predicted (kw):

1980	3,004	1985	3,019
1981	2,977	1986	3,068
1982	2,844	1987	--
1983	2,934	1988	--
1984	2,969		

H. ASSESSMENT OF RESOURCES - Burgeo

Small Scale Hydro Potential

The Burgeo area has an abundance of hydroelectric potential with no less than seven possible sites within 9 km. of the nearest transmission line. In addition, Dry Pond Brook, although somewhat distant from the community at 12.8 km. is readily accessible from the road and has a nominal capacity of 8.3 mw. through a head of 76 M., making it suitable for a conventional hydroelectric development. This site could also be partially developed as a small scale hydro site.

Four of the remaining seven sites are located on Seal Brook, approximately 7.2 km. from the nearest transmission line. The first, located at the mouth of the brook where it empties into Grandy Brook, has a nominal capacity of 720 kw. through a head of approximately 11 M. The second site is at Lower Falls, with a nominal capacity of 1.1 mw. through a head of approximately 17 M. The third and fourth sites are at Middle Falls and Upper Falls. Middle Falls has a nominal capacity of 575 kw. through a head of 9 M., and Upper Falls has a nominal capacity of 1.0 mw. through a head of 16 M.

Other sites in the area include King's Harbour Brook, located 6.9 km. from the community, with an estimated nominal capacity of 2.1 mw. through a head of 27 M. The Little Seal Brook site is located 8.8 km. from the community and has a nominal capacity of 630 kw. through a head of 30 M. Lastly, Little King's Harbour Brook is located 5.4 km. from the community and has a nominal capacity of 750 kw. through a head of 98 M.

Wood Resources

The area within 20 km. of Burgeo is nearly devoid of any forest. The land has severe limitations which preclude the growth of commercial forests, including thin soil cover, exposure, bog development and wet soils. Except for the valley of Grandy's Brook, growths of less than 10 $ft.^3$ per acre per year can be expected in the few locations where trees grow. Along Grandy's Brook, growths of 11 to 30 $ft.^3$ per acre per year can be expected. The dominant species is black spruce.

The Statistics Canada data base for this area indicates that less than 8% of householders use wood as a primary heating source. The potential for increased use of wood as a primary or secondary fuel appears limited.

Peat Resources

No published fuel peat inventories are available for this area.

Wind Energy Potential

The Atmospheric Environment Service maintains mean annual wind speed records for Burgeo. The nominal yearly energy production estimate is 703 kwh. per square meter of swept area.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

With an abundance of potential in the area, small scale hydroelectric development appears to be the best alternative energy technology for Burgeo. The most promising site for development is at Lower Falls on Seal Brook. The capital cost of developing this site is estimated to be between $2.0 and $2.7 million. This would yield an Annual Equivalent Cost of energy of approximately $0.11 per kwh. The economics of developing this site should be compared very closely with those of extending the provincial power grid into Burgeo.

The data base on peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Burgeo COMMUNITY: Burgeo

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	4 352 545	1 800 252	200 080		783
Commercial	1 004 925				
Industrial	4 335 576				
Government	220 593				
Street Lighting	153 648				
TOTAL	10 067 287	1 800 252	200 080		783

1982 ENERGY PROFILE

LOAD CENTER: Burgeo COMMUNITY: Burgeo

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	15 669	69 625	7 539		6 333	99 166
Commercial	3 618					3 618
Industrial	15 608					15 608
Government	794					794
Street Lighting	553					553
TOTAL	36 242	69 625	7 539		6 333	119 739

7.2 REMOTE COMMUNITY ANALYSIS

Load Centre: Francois

Communities Serviced: Francois

Status: Unincorporated

Location: Lat: 47° 35' N

Long: 56° 45' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

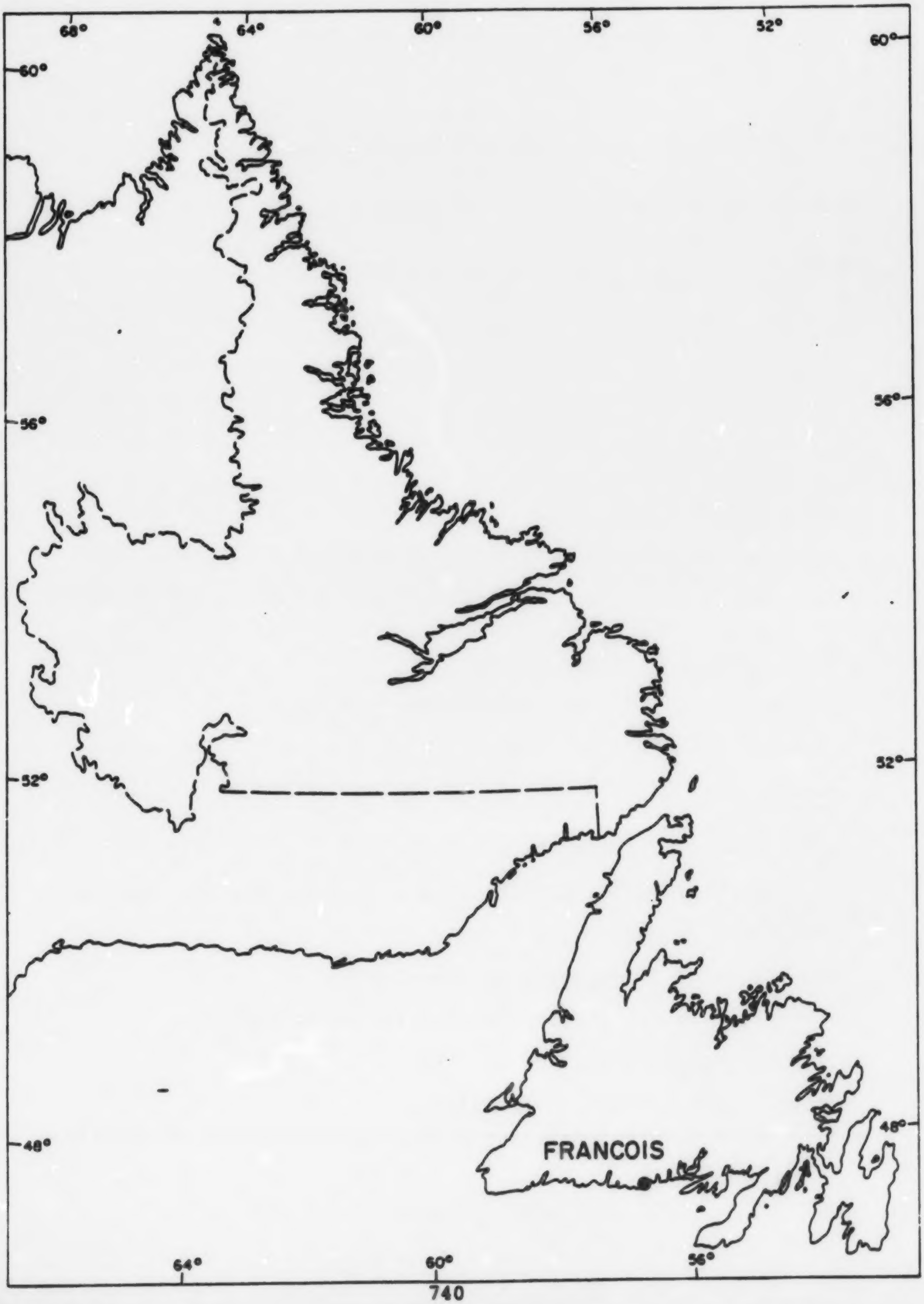
Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.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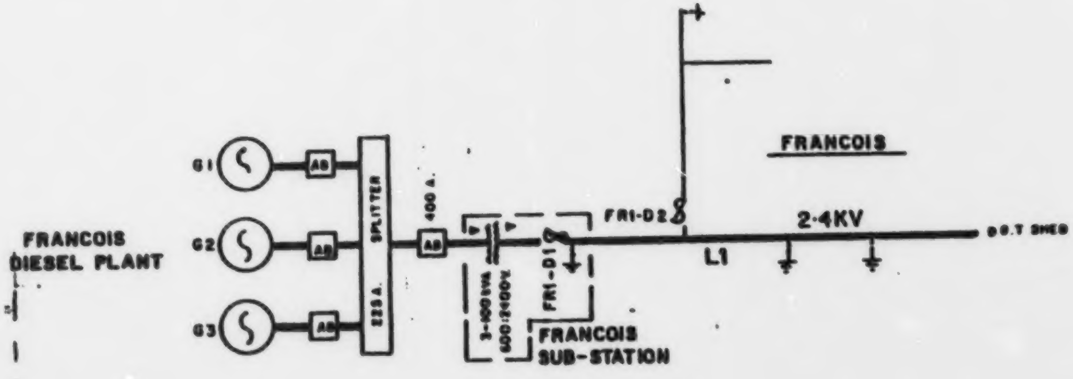


FRANCOIS
DIESEL PLANT
G1
G2
G3
AB
AB
AB
SPLITTER
225A.
400 A.
AB
3-100 kVA
600:2400V
FR1-D1
FRANCOIS
SUB-STATION
FR1-D2
L1
FRANCOIS
2·4KV
D.O.T SHED

APPROVED BY: W.F.R	NEWFOUNDLAND AND LABRADOR HYDRO		SH 1 of 1
DATE: 83-01-01	FRANCOIS DISTRIBUTION SYSTEM		DWG. No. 507-1
REVISION No.: 0			

A. History and Current Status

1. N/A

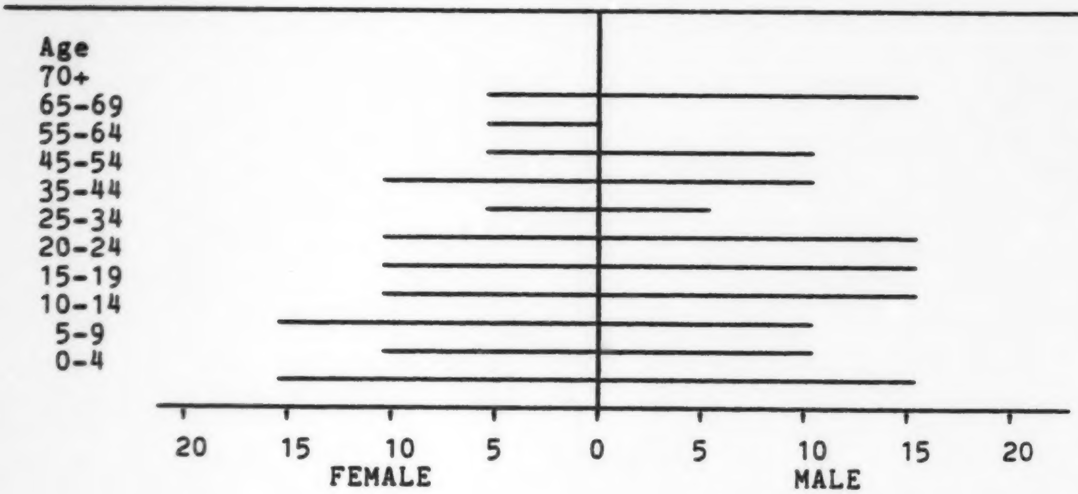
2. Demographics

1981 Population: 219

Projected Future Population Growth:

At 2% per annum: 1986 - 241 1991 -263

Population Structure by Age and By Gender - 1981



No. of Females - 100 No. of Males - 119

Footnotes

There is a fairly young population, with 68% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ___ Wells ___ Other ___

Distribution:

Pipe X Truck ___ Individual Systems ___ None ___

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ___

Treatment:

Sedimentation ___ Filtration ___ Chlorination X
Fluoridation ___ None ___

---

2. Sewage

Collection System:

Pipe ___ Truck ___ Individual Systems X None ___

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ___ Treatment Plant ___ None ___

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes ___ No X
Landfill Site Utilized: Yes ___ No X
Other: open dump Yes X No ___

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Burgeo

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ________

Other: ______________________

---

2. Education

School located in community: Yes ____ No X

Grades: __________

Size: ____ Classrooms: ____ Teachers: ____

---

3. Residential

(1) Number of occupied private dwellings: 55
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 50
(5) Number of rented homes: 5
(6) Number of single detached homes: 50
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 4.1
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars		X	
Heavy Vehicles		X	
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
   1 - 175 kw Cat. with B.B.C. Generator
   1 - 100 kw Cummins with Tamper Generator
   1 - 200 kw Cummins with Onan Generator

3. **Diesel Fuel Consumption:**

	1981	1982
Annual Fuel Use (litres)	218,194	226,068
Annual Fuel Cost	$62,583.00	$83,679.00
Cost per Litre	$0.29	$0.37
Cost Increase		28%

4. **Electricity Demand - Historical and Predicted (mwh):**

1980	496	1985	656
1981	517	1986	695
1982	550	1987	738
1983	584	1988	783
1984	618		

5. **Peak Load Demand - Historical and Predicted (kw):**

1980	150	1985	208
1981	150	1986	221
1982	173	1987	237
1983	184	1988	251
1984	196		

H. ASSESSMENT OF RESOURCES - Francois

Small Scale Hydro Potential

There are two possible sites within approximately 7 km. of the nearest transmission line. The closer and smaller of the two is located at Cooper Cove, approximately 3.2 km. from the nearest transmission line. This site has a nominal capacity of 1.0 mw. through a head of approximately 91 M. The other site, located 6.6 km. from the transmission line at Northeast Cove, has a nominal capacity of 1.5 mw. through a head of approximately 215 M.

Wood Resources

The area within 20 km. of Francois is nearly devoid of any forest. The lands have severe limitations which preclude the growth of commercial forests. These include thin or stony soil and exposure. Growths of less than 10 $ft.^3$ per acre per year can be expected. Timber rights in the area are owned by the Crown. The dominant species is black spruce.

The Statistics Canada data base for this area shows that less than 8% of householders use wood as a primary heating fuel. The potential for increasing the use of wood as a primary or secondary fuel appears limited.

Peat Resources

No published fuel peat inventories are available for this area.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is a potential site for this alternative in this area, i.e., a church is located within close proximity to the diesel plant.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

Although the electrical load in the community is small, the partial development of a larger hydro site at Cooper Cove appears to be competitive with diesel generated electricity. The estimated capital cost to develop this site is between $688,000 and $1 million. This yields an Annual Equivalent Cost of energy of $0.27 per kwh. as compared to $0.25 per kwh. for diesel generated electricity.

The potential recovery of waste heat from the diesel plant as a source of energy for the community church is an option which warrants further investigation.

The data base on peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Francois COMMUNITY: Francois

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	392 416	180 025	18 184		87
Commercial	31 504				
Industrial	10 024				
Government	30 072				
Street Lighting	13 068				
TOTAL	477 084	180 025	18 184		87

1982 ENERGY PROFILE

LOAD CENTER: Francois COMMUNITY: Francois

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 413	6 962	685		704	9 764
Commercial	113					113
Industrial	36					36
Government	108					108
Street Lighting	47					47
TOTAL	1 717	6 962	685		704	10 068

7.3 REMOTE COMMUNITY ANALYSIS

Load Centre:	Grand Bruit
Communities Serviced:	Grand Bruit
Status:	Unincorporated
Location:	Lat: 47° 40' N
	Long: 58° 14' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

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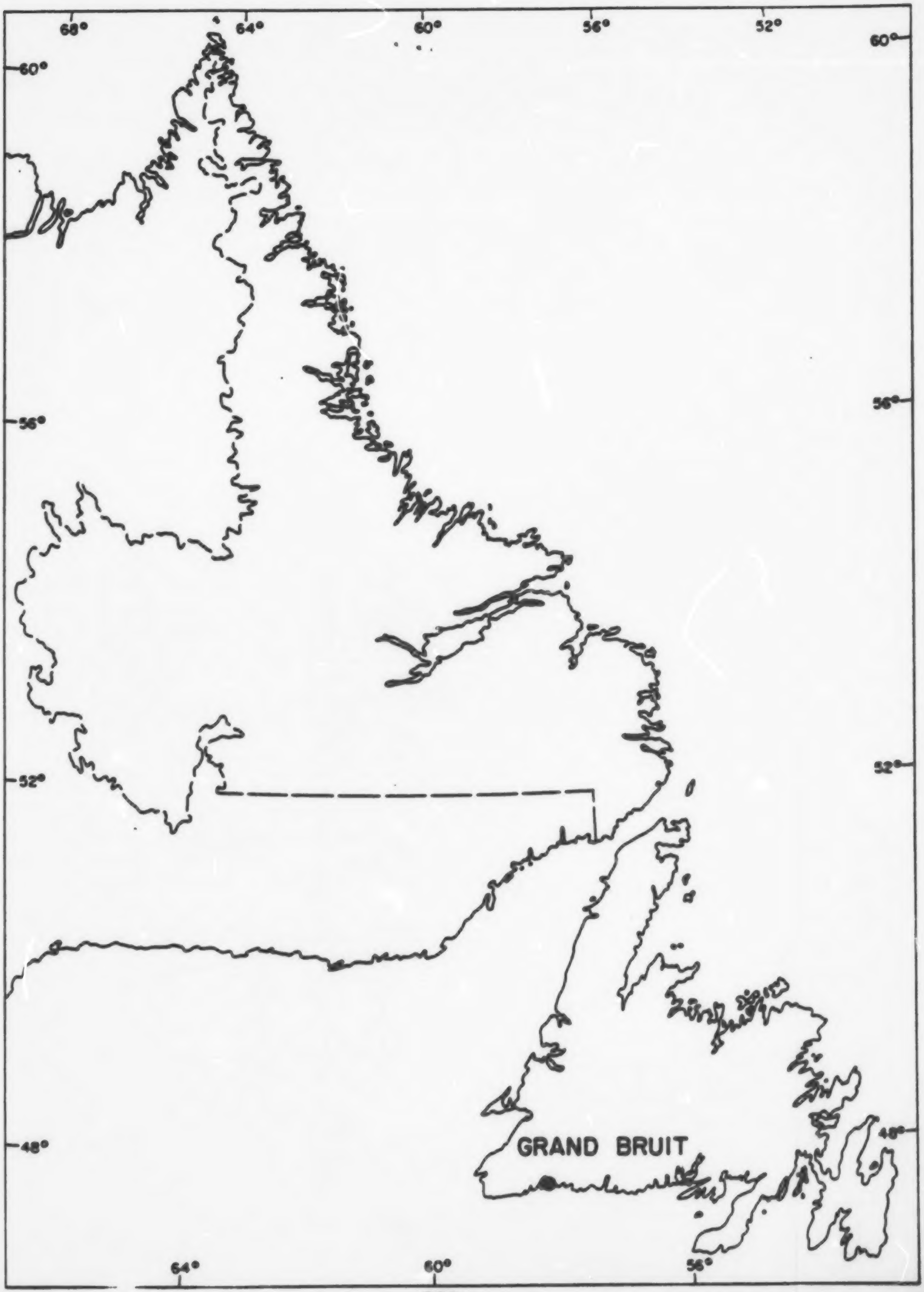
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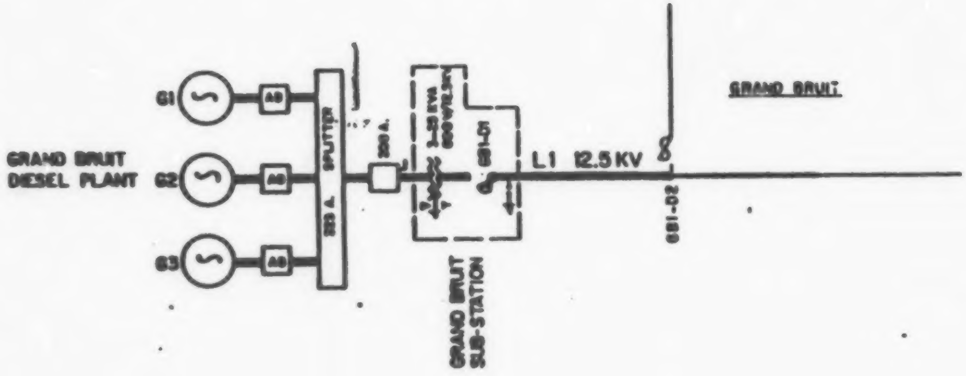

GRAND BRUIT
DIESEL PLANT
G1
G2
G3
SPLITTER
225 A.
200 A.
3-25 KVA
600V/12.5KV
681-01
GRAND BRUIT
SUB-STATION
L1 12.5 KV
681-02
GRAND BRUIT

APPROVED BY: WFB	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 of 1
DATE: 83-01-01	GRAND BRUIT DISTRIBUTION SYSTEM	DWG. No. 503-1
REVISION No.: 2		

A. History and Current Status

1. N/A

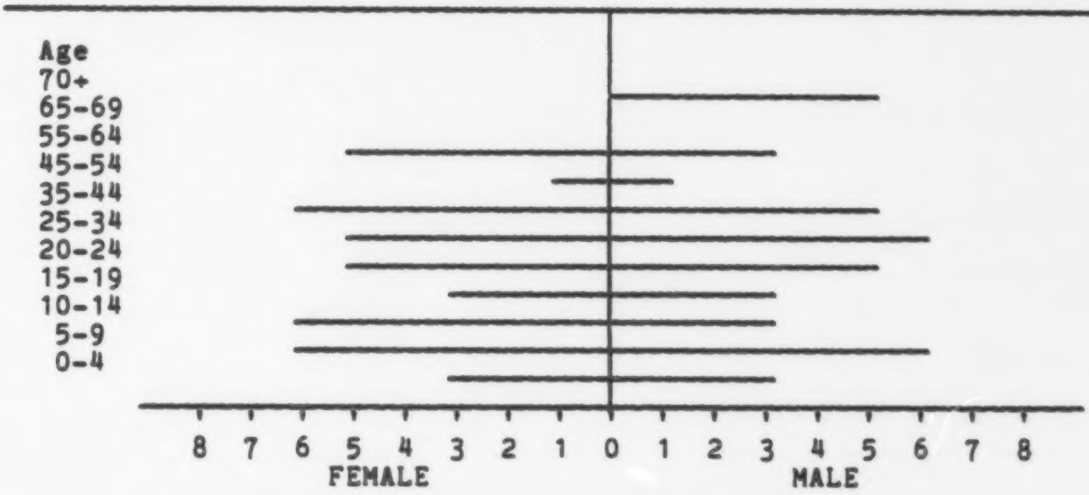
2. **Demographics**

1981 Population: 80

Projected Future Population Growth:

At 2% per annum: 1986 - 88 1991 - 96

Population Structure by Age and By Gender - 1981



No. of Females - 40 No. of Males - 40

Footnotes

There is a fairly young population, with 68% under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells X Other ____

Distribution:

Pipe X Truck X Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes ____ No X
Landfill Site Utilized: Yes ____ No X
Other: open dump Yes X No ____

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Burgeo

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ________

Other: ________________

---

2. Education

School located in community: Yes X No ____

Grades: Grade One to Grade 10

Size: N/A Classrooms: N/A Teachers: 2

---

3. Residential

(1) Number of occupied private dwellings: 23
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 23
(5) Number of rented homes: 0
(6) Number of single detached homes: 23
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 3.6
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes	No X	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchance service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars		X	
Heavy Vehicles		X	
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 2 - 40 kw Deutz with Tamper Generators
1 - 60 kw Deutz with Tamper Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	111,561	109,066
Annual Fuel Cost	$33,415.00	$38,111.00
Cost per Litre	$0.30	$0.35
Cost Increase		17%

4. Electricity Demand - Historical and Predicted (mwh):

1980	202	1985	215
1981	219	1986	215
1982	215	1987	215
1983	215	1988	215
1984	215		

5. Peak Load Demand - Historical and Predicted (kw):

1980	52	1985	66
1981	62	1986	66
1982	66	1987	66
1983	66	1988	66
1984	66		

H. ASSESSMENT OF RESOURCES - Grand Bruit

Small Scale Hydro Potential

There are three possible sites within 7 km. of the nearest transmission line. The largest of these, with a nominal capacity of 175 kw. through a head of approximately 9 M. is located in the community at Grand Bruit Falls. Another site, located 4 km. from the community at Roti Brook, has a nominal capacity of 125 kw. through a head of approximately 6 M. The most distant of the three sites is located at Northwest Brook Pond, with a nominal capacity of 80 kw. through a head of approximately 6 M.

Wood Resources

The area within 20 km. of Grand Bruit contains lands that have severe limitations which preclude the growth of commercial forests. Theseinclude thin, stony soil and exposure. Growths of less than 10 $ft.^3$ per acre per year can be expected. The dominant species is black spruce. Timber rights in the area are owned by the Crown.

The Statistics Canada data base for the area indicates that less than 10% of householders use wood as a primary heating source. The potential for increased use of wood appears to be quite limited in this area.

Peat Resources

No published fuel peat inventories are available for this area.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

Despite its small size, development of a 30 kw. small scale hydro plant at Grand Bruit Falls shows some promise. While the Annual Equivalent Cost of energy at $0.36 per kwh. is somewhat higher than the $0.25 per kwh. for diesel generation, the site warrants closer examination.

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Grand Bruit COMMUNITY: Grand Bruit

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	145 364	62 191	6 910		35
Commercial	12 013				
Industrial					
Government	11 542				
Street Lighting	8 316				
TOTAL	177 235	62 191	6 910		35

1982 ENERGY PROFILE

LOAD CENTER: Grand Bruit COMMUNITY: Grand Bruit

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	523	2 405	260		283	3 471
Commercial	43					43
ıdustrial						
Government	42					42
Street Lighting	30					30
TOTAL	638	2 405	260		283	3 586

7.4 REMOTE COMMUNITY ANALYSIS

Load Centre: Grey River

Communities Serviced: Grey River

Status: Unincorporated

Location: Lat: 47° 35' N

Long: 57° 06' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

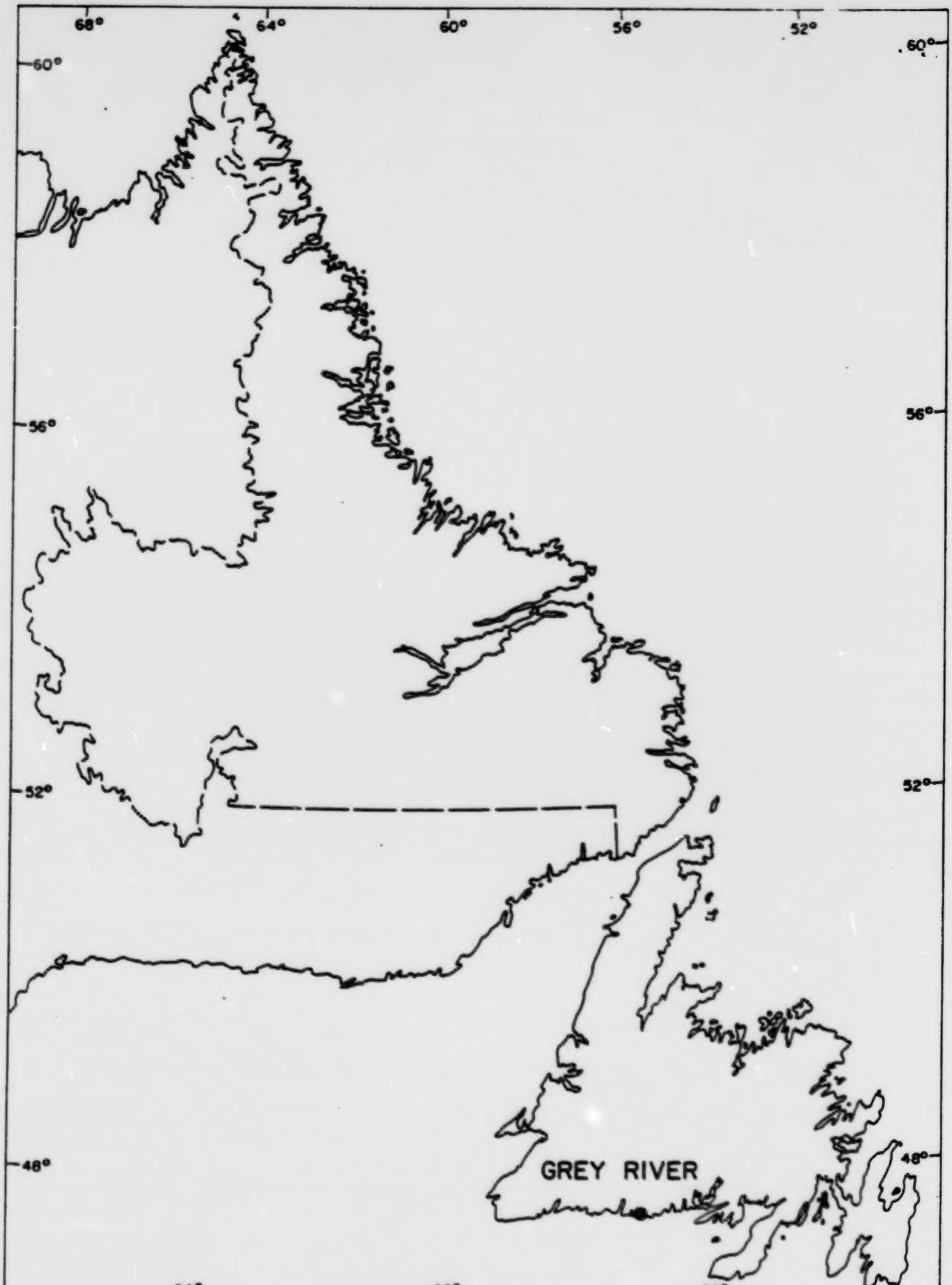
Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.


68°
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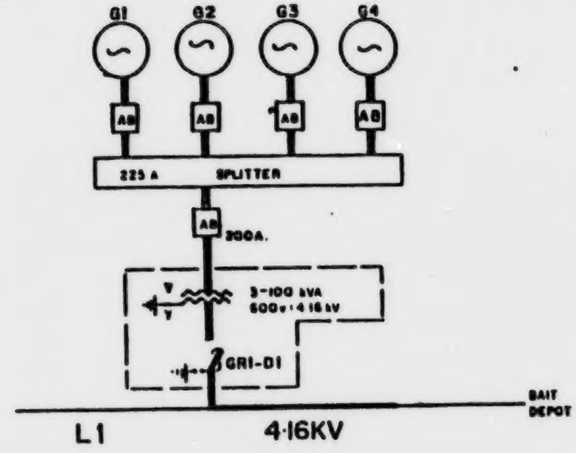
GREY RIVER
64°
60°
56°

GREY RIVER
DIESEL PLANT


G1
G2
G3
G4
AB
AB
AB
AB
225 A
SPLITTER
AB
200A.
3-100 kVA
600v : 4.16 kV
GRI-D1
L1
4·16KV
BAIT
DEPOT

GREY RIVER.

APPROVED BY: W.F.R	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 of 1
DATE: 83-01-01	GREY RIVER DISTRIBUTION SYSTEM.	DWG.No. 506-1
REVISION No.: 4		

A. **History and Current Status**

1. N/A

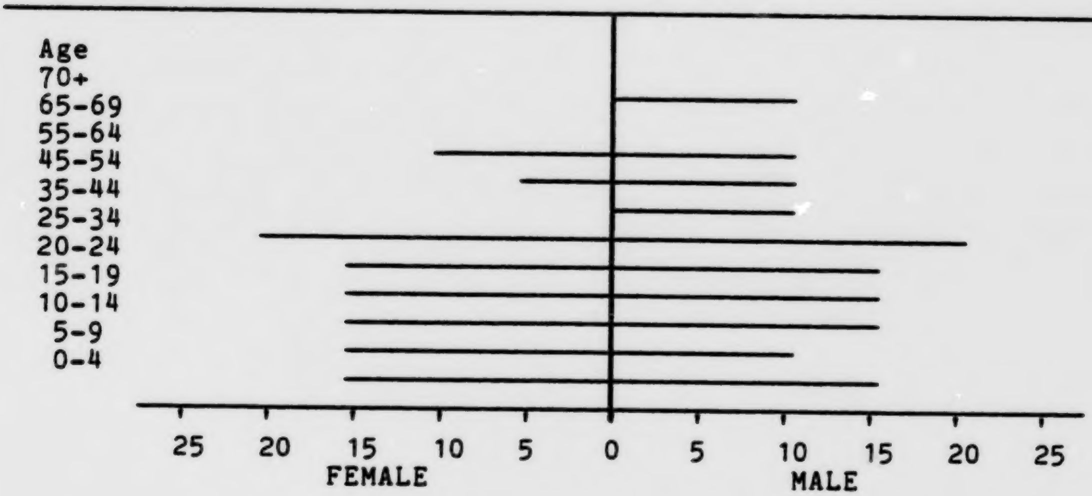
2. **Demographics**

1981 Population: 234

Projected Future Population Growth:

At 2% per annum: 1986 - 132 1991 - 144

Population Structure by Age and By Gender - 1981



No. of Females - 110 No. of Males - 124

Footnotes

There is a fairly young population: 77% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ____ Wells ____ Other ________

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination X

Fluoridation ____ None ____

2. Sewage

Collection System:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

3. Solid Waste Disposal

Garbage Collection Organized:	Yes ____	No X
Landfill Site Utilized:	Yes X	No ____
Other:	Yes ____	No X

4. Police Protection

R.C.M.P.: Yes X No ___

Patrolled from: Burgeo

---

5. Fire Protection Organized

Organized: Yes ___ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ___ No X

Size of Facility: ___

Staff: Doctors: ___ Nurses: ___

Other: ___

---

2. Education

School located in community: Yes X No ___

Grades: Kindergarten to Grade 10

Size: N/A Classrooms: N/A Teachers: X

---

3. Residential

(1) Number of occupied private dwellings: 60
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 55
(5) Number of rented homes: 5
(6) Number of single detached homes: 55
(7) Number of single attached homes: 5
(8) Average number of persons per private household: 3.9
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars		X	
Heavy Vehicles		X	
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 2 - 136 kw Cat. with B.B.C. Generator
1 - 60 kw Cat. with Tamper Generator

3. **Diesel Fuel Consumption:**

	1981	1982
Annual Fuel Use (litres)	161 229	148,625
Annual Fuel Cost	$39,674.00	$44,528.00
Cost per Litre	$0.25	$0.30
Cost Increase		20%

4. **Electricity Demand - Historical and Predicted (mwh):**

1980	262	1985	487
1981	343	1986	525
1982	356	1987	567
1983	390	1988	611
1984	452		

5. **Peak Load Demand - Historical and Predicted (kw):**

1980	90	1985	152
1981	100	1986	164
1982	110	1987	178
1983	121	1988	192
1984	141		

H. ASSESSMENT OF RESOURCES - Grey River

Small Scale Hydro Potential

There is one possible site located on Nook Brook, approximately 7.8 km. from the nearest transmission line. The site has a nominal capacity of 1.8 mw. through a head of approximately 95 M.

Wood Resources

The area immediately surrounding Grey River has lands having severe limitations to the growth of commercial forests. These include thin, stony soil and exposure. Growths of less than 10 $ft.^3$ per acre per year can be expected. In the nearby Grey River valley, growths of 11 to 30 $ft.^3$ per acre per year can be expected over about 60% of a strip about 500 metres wide along the river banks. The dominant species in the area is black spruce. Timber rights are owned by the Crown near the community; however, at about 12 km. upstream they are owned by Bowater Newfoundland Company Limited.

Statistics Canada indicates that approximately 11% of householders use wood as a primary heating fuel. Additional information would be required to evaluate the potential for increased use of wood in this area.

Peat Resources

No published fuel peat inventories are available for this area.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is potential for this alternative in this area, i.e., a community school is located within close proximity to the diesel plant.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

The small electrical load in the community of Grey River makes small scale hydro development uneconomic. The Annual Equivalent Cost of hydro generated electricity is estimated to be $0.47 per kwh., which is significantly higher than the $0.25 per kwh. for diesel generated electricity.

The data base on wood, peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

The most promising option for this community is the potential for a heat recovery project associated with the community school.

1982 ENERGY PROFILE

LOAD CENTER: Grey River COMMUNITY: Grey River

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	271 079	176 752	19 639		104
Commercial	6 758				
Industrial					
Government	27 033				
Street Lighting					
TOTAL	304 870	176 752	19 639		104

1982 ENERGY PROFILE

LOAD CENTER: Grey River COMMUNITY: Grey River

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	976	6 836	740		841	8 653
Commercial	24					24
Industrial						
Government	97					97
Street Lighting						
TOTAL	1 098	6 836	740		841	8 774

7.5 REMOTE COMMUNITY ANALYSIS

Load Centre: La Poile

Communities Serviced: La Poile

Status: Unincorporated

Location: Lat: 47° 41' N

Long: 58° 24' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

Department of Municipal Affairs and Housing, May and June 1983.

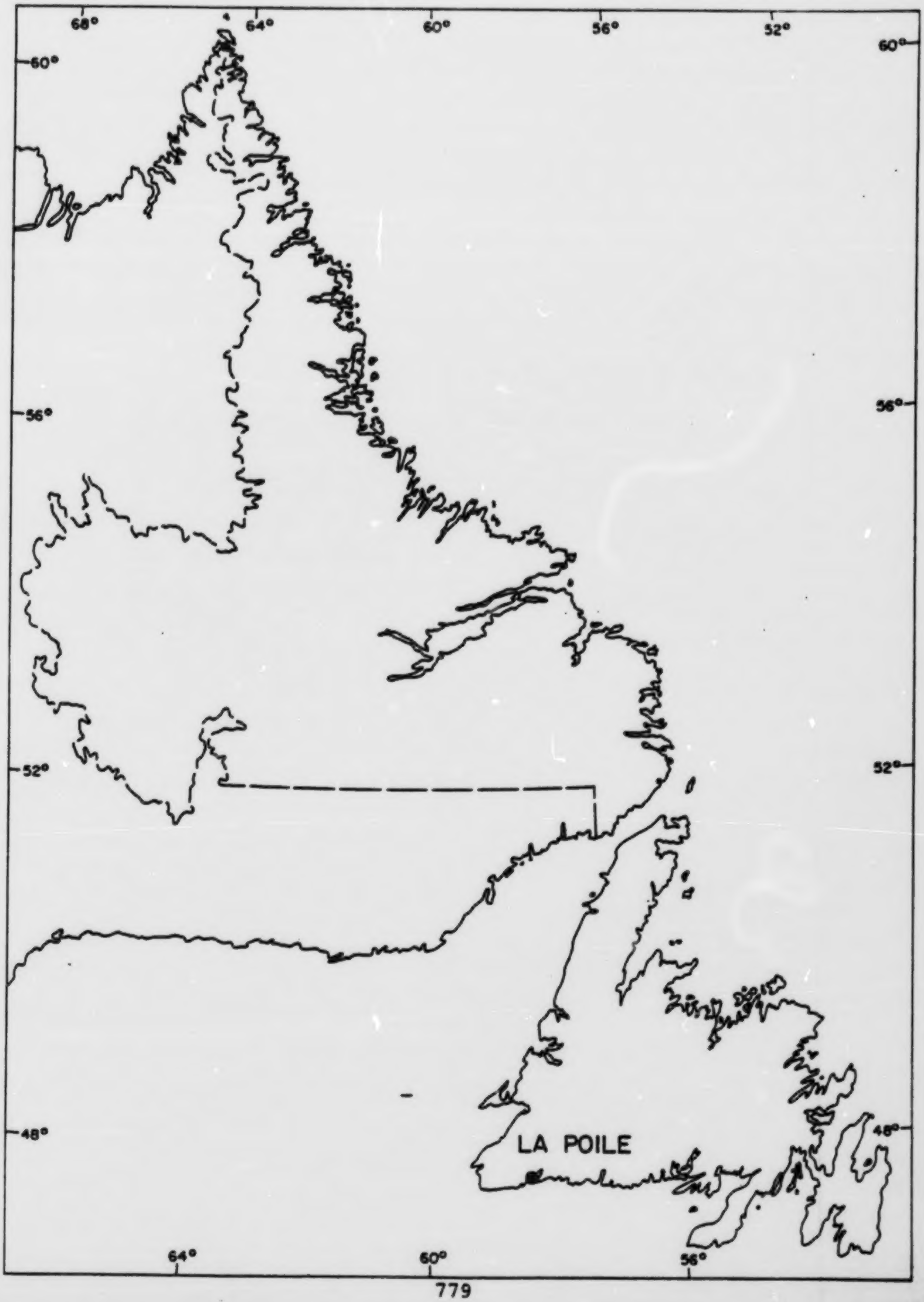
Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Ultramar Canada Inc., August 1983.

Imperial Oil Limited, July 1983.



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LA POILE
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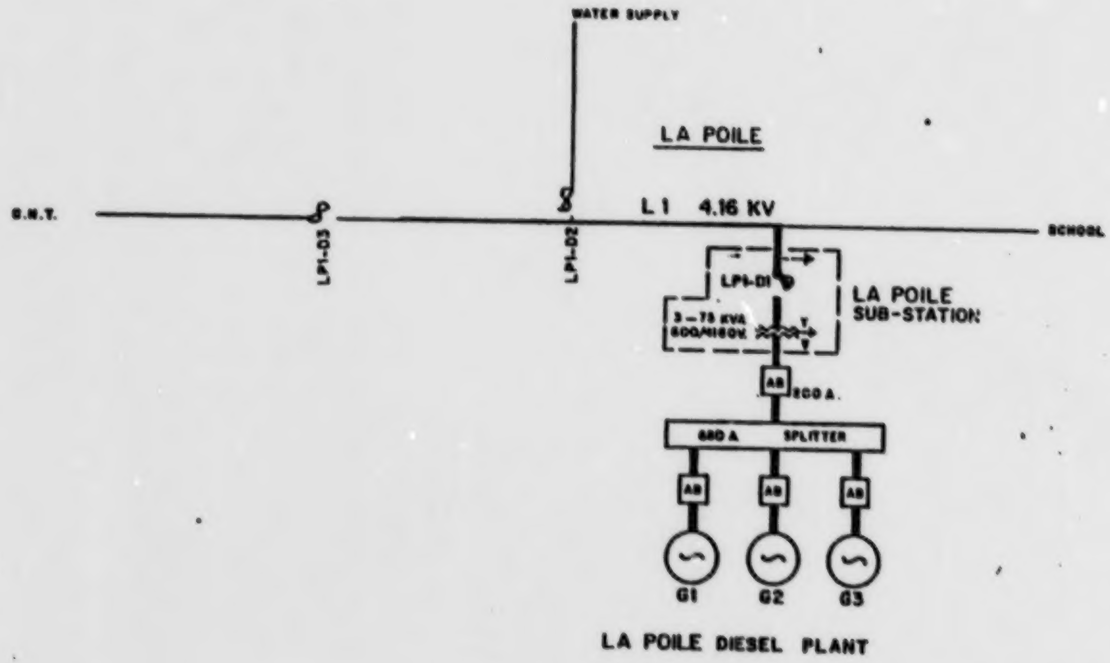

WATER SUPPLY
LA POILE
S.H.T.
L 1 4.16 KV
SCHOOL
LP1-03
LP1-02
LP1-D1
LA POILE
SUB-STATION
3 – 75 KVA
600/4160V.
AB
200 A.
800 A
SPLITTER
AB
AB
AB
G1
G2
G3
LA POILE DIESEL PLANT

APPROVED BY: WFR	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 of 1
DATE: 23-01-01	LA POILE DISTRIBUTIO SYSTEM	DWG.No. 502-1
REVISION No.: 4		

A. History and Current Status

1. N/A

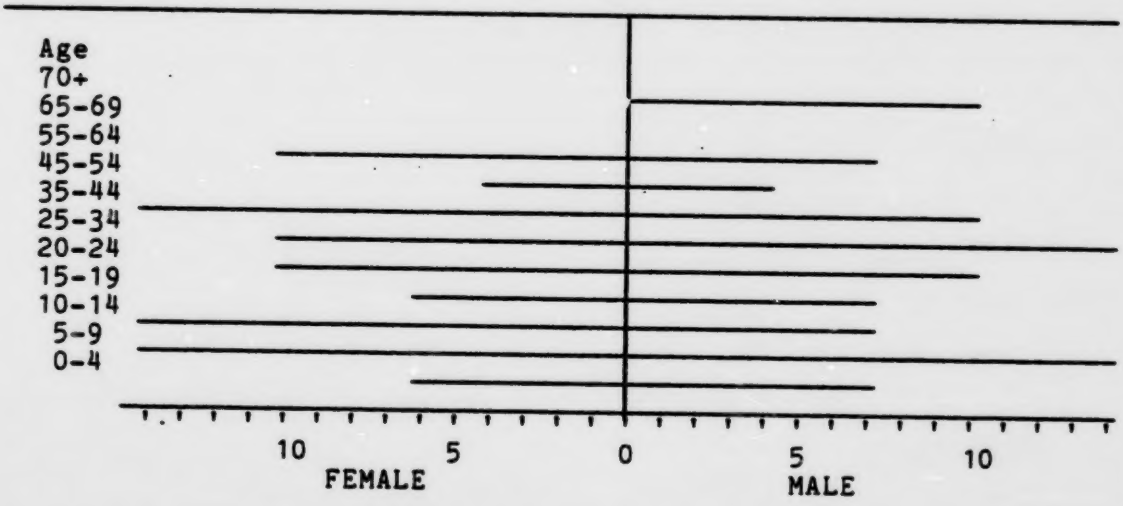
2. Demographics

1981 Population: 186

Projected Future Population Growth:

At 2% per annum: 1986 - 205 1991 - 223

Population Structure by Age and By Gender - 1981



No. of Females - 100 No. of Males - 86

Footnotes

There is a fairly young population: 65% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells X Other ____

Distribution:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None X

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems X None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon X Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized:	Yes ____	No X
Landfill Site Utilized:	Yes ____	No X
Other: open dump	Yes X	No ____

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Channel/Port aux Basques

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 11

Size: N/A Classrooms: N/A Teachers: 4

3. Residential

(1) Number of occupied private dwellings: 53
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 53
(5) Number of rented homes: 0
(6) Number of single detached homes: 53
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 3.6
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A
N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes	No X	
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars		X	
Heavy Vehicles		X	
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
1 - 60 kw Deutz with Tamper Generator
1 - 40 kw Deutz with Tamper Generator
1 - 100 kw Deutz with B.B.C. Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	120 677	119,190
Annual Fuel Cost	$35,363.00	$40,319.00
Cost per Litre	$0.29	$0.34
Cost Increase		17%

4. Electricity Demand - Historical and Predicted (mwh):

1980	279	1985	347
1981	285	1986	363
1982	301	1987	380
1983	315	1988	399
1984	330		

5. Peak Load Demand - Historical and Predicted (kw):

1980	84	1985	97
1981	76	1986	102
1982	84	1987	107
1983	88	1988	113
1984	93		

H. ASSESSMENT OF RESOURCES - La Poile

Small Scale Hydro Potential

There are four possible sites within approximately 6 km. of the nearest transmission line. Three of these are located on Farmer's Brook. The largest has a nominal capacity of 220 kw. through a head of approximately 6 M. It is located 3.2 km. from the nearest transmission line. The remaining two are located on the east and west streams at 3.5 km. and 5.3 km. respectively from the nearest transmission line. The site on the east stream has a nominal capacity of 110 kw. through a head of approximately 12 M., while the west stream site has a nominal capacity of 120 kw. through a head of approximately 15 M.

The fourth site is located on Broad Cove Brook, approximately 5.1 km. from the nearest transmission line. This site has a nominal capacity of 3.9 mw. through a head of approximately 65 M.

Wood Resources

The La Poile area contains lands which have severe limitations that preclude the growth of commercial forests. These include shallow, stony soils, bedrock and exposure, along with low soil fertility. Growths of less than 10 $ft.^3$ per acre per year are expected. However, the adjacent La Poile River valley can support growths of 31 to 50 $ft.^3$ per acre per year along a strip about 700 M. wide along the river. Immediately north of la Poile, in an area about 10 $km.^2$, growths of 11 to 30 $ft.^3$ per acre per year can be expected over 30% of the land. The dominant species in the area is black spruce. Timber rights are held by the Crown.

The Statistics Canada data base indicates that only 10% of householders use wood as a primary heating fuel. The potential to increase the use of wood as a primary or secondary fuel would require additional study.

Peat Resources

No published fuel peat inventories are available for this area.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

The small electric load in the community makes small scale hydro development uneconomic. The most attractive site in the area has an Annual Equivalent Cost for hydro electricity of $0.51 per kwh., which is more than double the cost for diesel generated electricity, i.e., $0.25 per kwh.

Certain tracts of land in the La Poile area have a modest potential for fuelwood production. This appears to be the only promising alternative energy source for the community.

The data base on peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: La Poile COMMUNITY: La Poile

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	223 153	144 020	16 002		87
Commercial	15 432				
Industrial	17 101				
Government	9 176				
Street Lighting					
TOTAL	264 862	144 020	16 002		87

1982 ENERGY PROFILE

LOAD CENTER: La Poile COMMUNITY: La Poile

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	803	5 570	603		704	7 680
Commercial	56					56
Industrial	62					62
Government	33					33
Street Lighting						
TOTAL	954	5 570	603		704	7 831

7.6 REMOTE COMMUNITY ANALYSIS

Load Centre: McCallum

Communities Serviced: McCallum

Status: Unincorporated

Location: Lat: 47° 38' N
Long: 56° 14' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

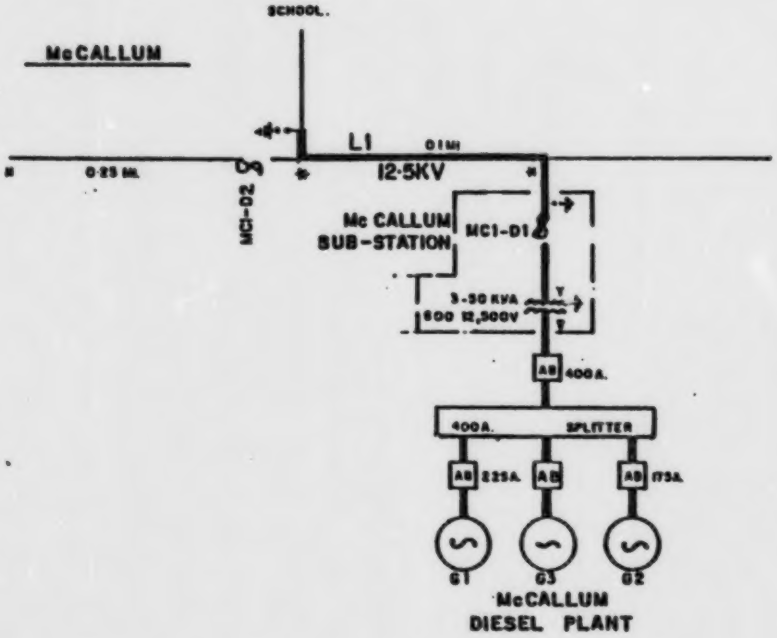
Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.


McCALLUM
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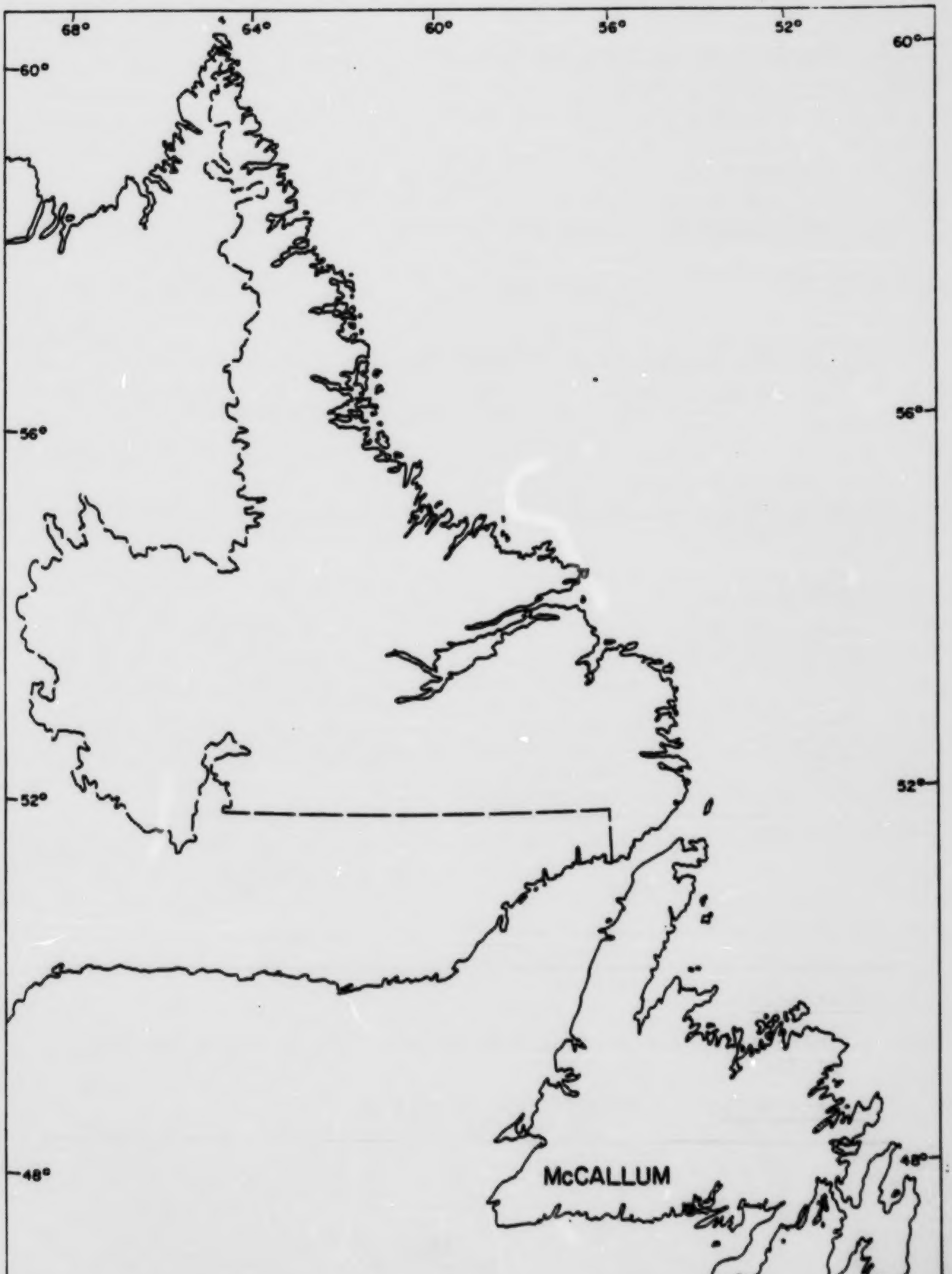
400A.
400A.
SPLITTER
AB
225A.
AB
AB
175A.
G1
G3
G2
McCALLUM
DIESEL PLANT

APPROVED BY: W.E.R.	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 of 1
DATE: 83-05-19	McCALLUM DISTRIBUTION SYSTEM	DWG. No. 122-1
REVISION No.: 4		

old 126-1

68°
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McCALLUM
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A. History and Current Status

1. N/A

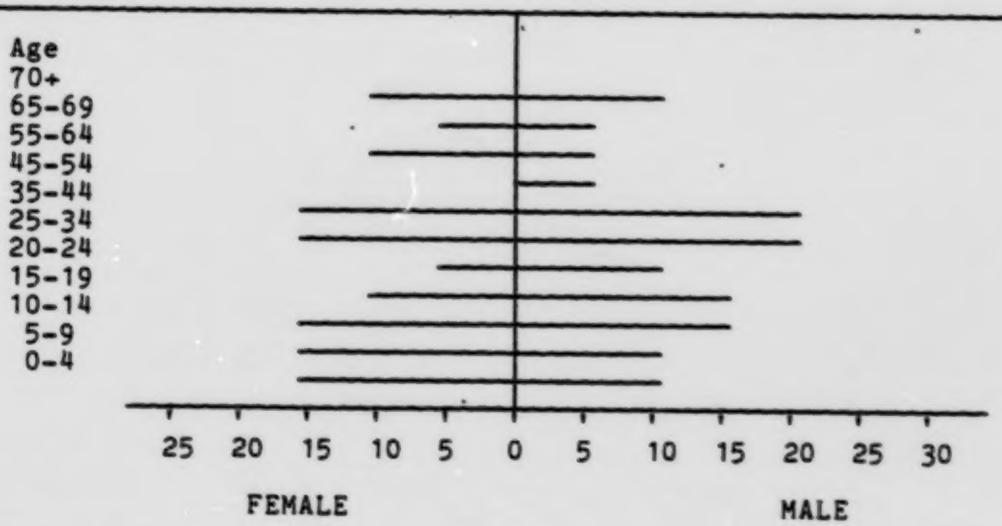
2. Demographics

1981 Population: 243

Projected Future Population Growth:

At 2% per annum: 1986 - 267 1991 - 292

Population Structure by Age and By Gender - 1981



No. of Females - 117 No. of Males - 126

Footnotes

There is a fairly young population: 63% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells _X_ Other ________

Distribution:

Pipe _X_ Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_ Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination _X_
Fluoridation ____ None ____

---

2. Sewage

Collection System:

Pipe _X_ Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_

Disposal:

Lagoon _X_ Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes ____ No _X_
Landfill Site Utilized: Yes ____ No _X_
Other: _open dump_ Yes _X_ No ____

---

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Harbour Breton

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 10

Size: N/A Classrooms: N/A Teachers: 4

3. Residential

(1) Number of occupied private dwellings: 50
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 45
(5) Number of rented homes: 5
(6) Number of single detached homes: 50
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 5.0
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC & NTV
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars		X	
Heavy Vehicles		X	
Other		X	

G. DIESEL ELECTRIC GENERATION

1. **Owner:** Newfoundland and Labrador Hydro/Power Distribution District

2. **Diesel Type:**
1 - 136 kw Cat. with Tamper Generator
1 - 136 kw Cat. with B.B.C. Generator
1 - 60 kw Cat. with B.B.C. Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	154 677	164,482
Annual Fuel Cost	$46,093.00	$52,655.00
Cost per Litre	$0.30	$0.32
Cost Increase		7%

4. Electricity Demand - Historical and Predicted (mwh):

1980	382	1985	503
1981	389	1986	536
1982	417	1987	572
1983	442	1988	610
1984	471		

5. Peak Load Demand - Historical and Predicted (kw):

1980	120	1985	156
1981	118	1986	167
1982	130	1987	178
1983	136	1988	191
1984	146		

H. ASSESSMENT OF RESOURCES - McCallum

Small Scale Hydro Potential

There are two possible sites within approximately 9 km. of the nearest transmission line. The more distant site is located on Allan's Cove Brook, 8.5 km. from the community. It has a nominal capacity of 470 kw. through a head of approximately 15 M. The closer site is at Rose Cove, approximately 5.6 km. from the community. This site has a nominal capacity of 410 kw. through a head of approximately 61 M.

Wood Resources

The area immediately surrounding McCallum is nearly devoid of any forest. The land has severe limitations which preclude the growth of commercial forests. These include thin, stony soil, bedrock, low fertility, and exposure. Growths of less than 10 $ft.^3$ per acre per year can be expected where trees grow. The dominant species is black spruce. Timber rights are held by the Crown in this area.

The Statistics Canada data base indicates that approximately 10% of householders use wood as a primary heating fuel. The potential to increase the use of wood as a primary or secondary fuel appears to be quite limited.

Peat Resources

No published fuel peat inventories are available for this area.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

The small electric load in the community makes small scale hydro development uneconomic. The Annual Equivalent Cost for hydro electricity in this community is estimated to be $0.45 per kwh., which is considerably higher than the $0.25 per kwh. for diesel generated electricity.

The available data on wood resources in the area implies that there is little opportunity for increased fuelwood utilization in the community.

The data base on peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: McCallum COMMUNITY: McCallum

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	313 334	147 293	16 366		87
Commercial	18 668				
Industrial	5 404				
Government	25 054				
Street Lighting	7 281				
TOTAL	369 741	147 293	16 366		87

1982 ENERGY PROFILE

LOAD CENTER: McCallum COMMUNITY: McCallum

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 128	5 697	617		704	8 146
Commercial	67					67
Industrial	19					19
Government	90					90
Street Lighting	26					26
TOTAL	1 331	5 697	617		704	8 348

7.7 REMOTE COMMUNITY ANALYSIS

Load Centre:	Monkstown
Communities Serviced:	Monkstown
Status:	Unincorporated
Location:	Lat: 47° 35' N
	Long: 54° 26' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

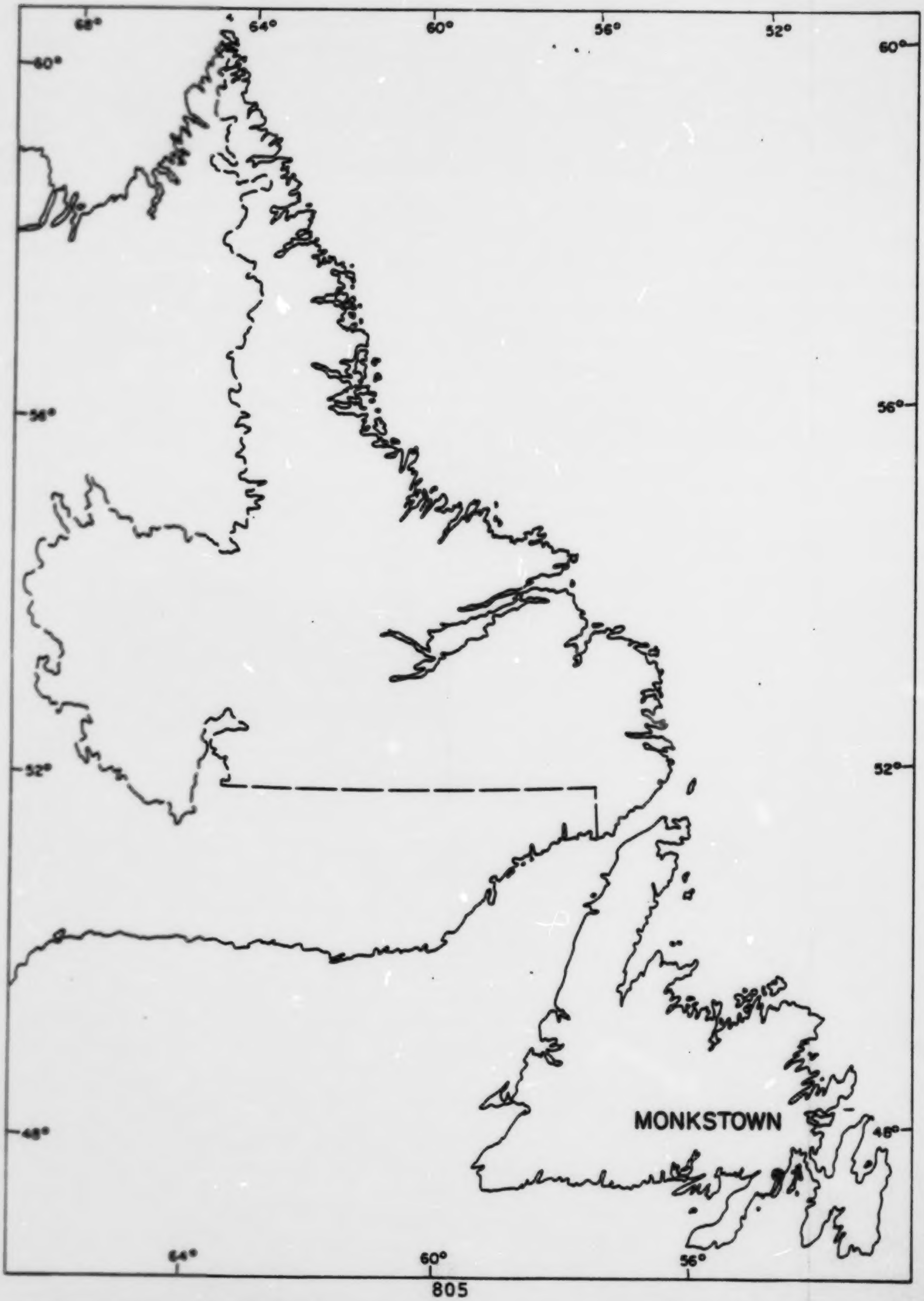
Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.



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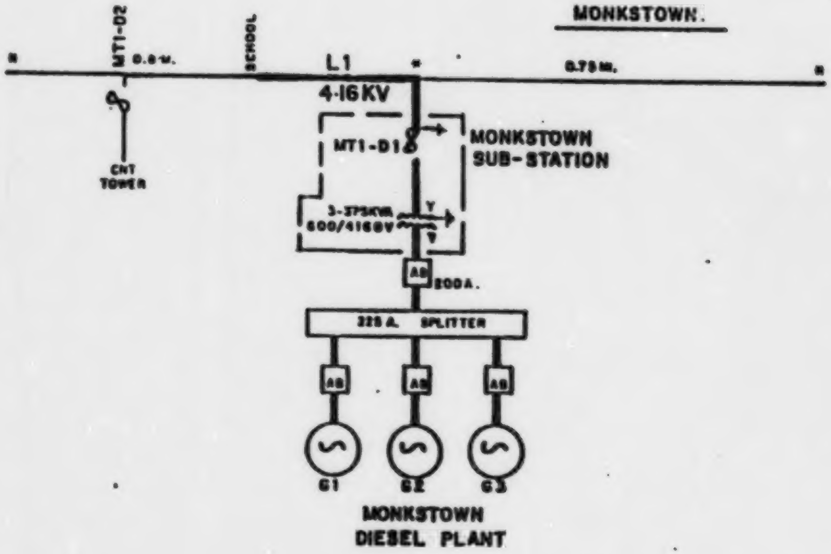
MONKSTOWN.
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SCHOOL
L1
4.16KV
0.75 M.
CNT
TOWER
MT1-D1
MONKSTOWN
SUB-STATION
3-375KVA
600/4160V
Y
AB
200A.
225 A. SPLITTER
AB
AB
AB
G1
G2
G3
MONKSTOWN
DIESEL PLANT

APPROVED BY: WFR	NEWFOUNDLAND AND LABRADOR HYDRO		SH 1 of 1
DATE: 83-01-11	MONKSTOWN DISTRIBUTION SYSTEM		DWG. No.
REVISION No.: 3			112-1

A. History and Current Status

1. N/A

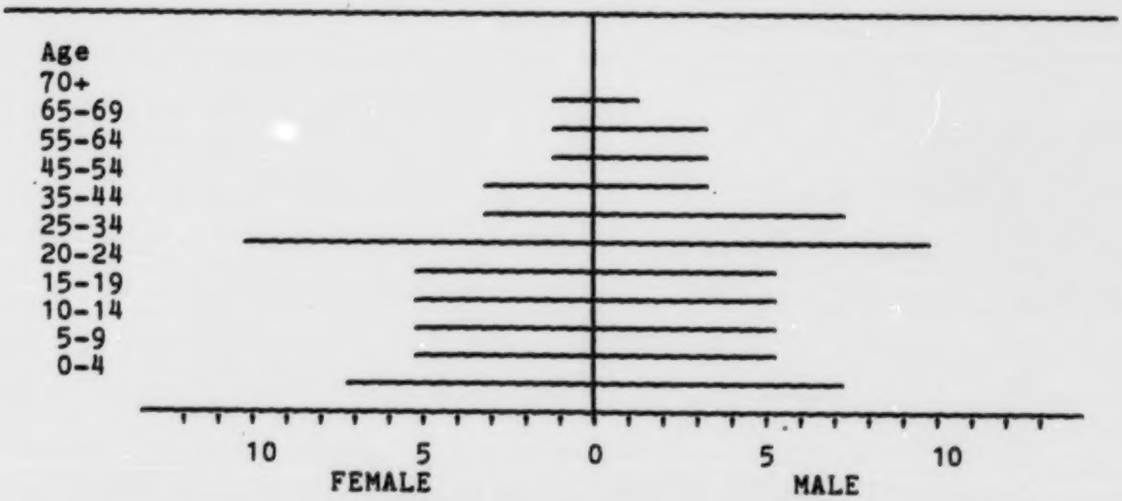
2. Demographics

1981 Population: 112

Projected Future Population Growth:

At 2% per annum: 1986 - 123 1991 - 134

Population Structure by Age and By Gender - 1981



No. of Females - 56 No. of Males - 66

Footnotes

There is a fairly young population: 73% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake _____ River _____ Wells __X__ Other ____________

Distribution:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__ Standpipes ___

Treatment:

Sedimentation _____ Filtration _____ Chlorination _____
Fluoridation _____ None __X__

---

2. Sewage

Collection System:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon __X__ Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes _____ No __X__
Landfill Site Utilized: Yes _____ No __X__
Other: open dump Yes __X__ No _____

4. Police Protection

R.C.M.P.: Yes X No

Patrolled from: Burin

---

5. Fire Protection Organized

Organized: Yes No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes No X

Size of Facility:

Staff: Doctors: Nurses:

Other:

---

2. Education

School located in community: Yes X No

Grades: Kindergarten to Grade 9

Size: N/A Classrooms: N/A Teachers: 2

3. Residential

(1) Number of occupied private dwellings: 29
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 27
(5) Number of rented homes: 2
(6) Number of single detached homes: 29
(7) Number of single attached homes: 2
(8) Average number of persons per private household: 3.9
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC & NTV
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 1 - 40 kw Deutz with Tamper Generator
2 - 60 kw Cat. with Tamper Generators

3. **Diesel Fuel Consumption:**

	1981	1982
Annual Fuel Use (litres)	137 034	133,353
Annual Fuel Cost	$37,872.00	$41,135.00
Cost per Litre	$0.28	$0.31
Cost Increase		11%

4. **Electricity Demand - Historical and Predicted (mwh):**

1980	222	1985	286
1981	227	1986	304
1982	241	1987	323
1983	255	1988	343
1984	270		

5. **Peak Load Demand - Historical and Predicted (kw):**

1980	96	1985	120
1981	96	1986	128
1982	98	1987	136
1983	106	1988	145
1984	113		

H. ASSESSMENT OF RESOURCES - Monkstown

Small Scale Hydro Potential

There are two possible sites within approximately 8 km. of the nearest transmission line. The larger and more distant site is located on Paradise River, approximately 7.2 km. from the community. It has a nominal capacity of 250 kw. through a head of approximately 6 M., The smaller site, located on Monkstown Brook, 0.3 km. from the community, has a nominal capacity of 290 kw. through a head of approximately 38 M.

Wood Resources

The Monkstown area contains lands that severely restrict or preclude the growth of commercial forests. The surrounding high barrens are devoid of any forest growth. A narrow strip of land on the east side of Paradise Sound and extending northward towards Davis Cove can support trees. In this area growth of less than 10 $ft.^3$ per acre per year occurs over 60% of the land, while growth of 11 to 31 $ft.^3$ per acre per year occurs over the remaining 40%. The dominant species is black spruce. Timber rights in this area are owned by the Crown.

The Statistics Canada data base for this load centre indicates that about 10% of householders use wood as a primary heating fuel. The potential to increase the use of wood as a primary or secondary fuel appears to be severely restricted.

Peat Resources

In 1980 the Provincial Government inventoried the eastern region. Although Monkstown is not singled out as having potential, several locations in the area show promise, such as Harbour Buffett (Island) with 200 hectares and 2 $M^3 \times 10^6$, Sound Island with 3,100 hectares and 35 $M^3 \times 10^6$, and Terrenceville with 500 hectares and 5 $M^3 \times 10^6$ of reserves. The Monkstown area with its surrounding bogs and barrens should also show promise for fuel peat reserves. This energy source should be examined more closely in future studies.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

Although the electric load in the community is quite small, the development of a small 50 kw. hydroelectric plant on Monkstown Brook appears to be competitive with diesel generated electricity. The estimated capital cost to develop this site is between $413,000 and $688,000. This yields an Annual Equivalent Cost of energy of $0.25 per kwh. which is the same as that for diesel generated electricity.

The available information on wood resources in the area suggests that there is no potential for increased usage of this alternative for this area.

While Monkstown was not identified in the Provincial Government's fuel peat inventory, the quite substantial reserves of fuel peat in nearby areas suggest that some potential may exist in the Monkstown area. This resource should be examined more closely.

The data base on wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Monkstown COMMUNITY: Monkstown

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	185 993	85 103	9 456		52
Commercial	9 442				
Industrial					
Government	9 442				
Street Lighting	5 974				
TOTAL	210 852	85 103	9 456		52

1982 ENERGY PROFILE

LOAD CENTER: Monkstown COMMUNITY: Monkstown

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	670	3 291	356		421	4 738
Commercial	34					34
Industrial						
Government	34					34
Street Lighting	22					22
TOTAL	759	3 291	356		421	4 828

7.8 REMOTE COMMUNITY ANALYSIS

Load Centre: Petites

Communities Serviced: Petites

Status: Incorporated

Location: Lat: 47° 37' N
Long: 58° 38' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

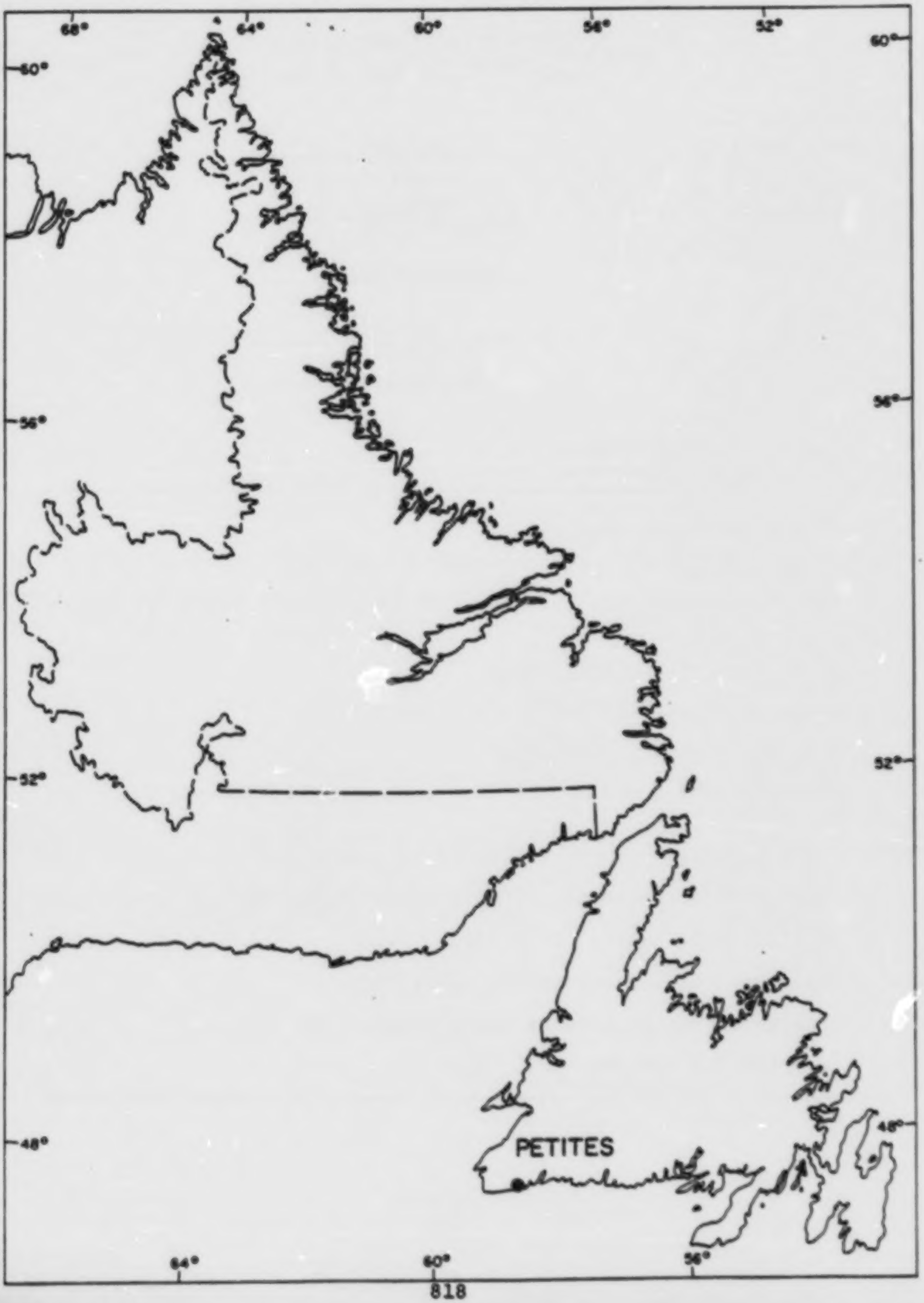
Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.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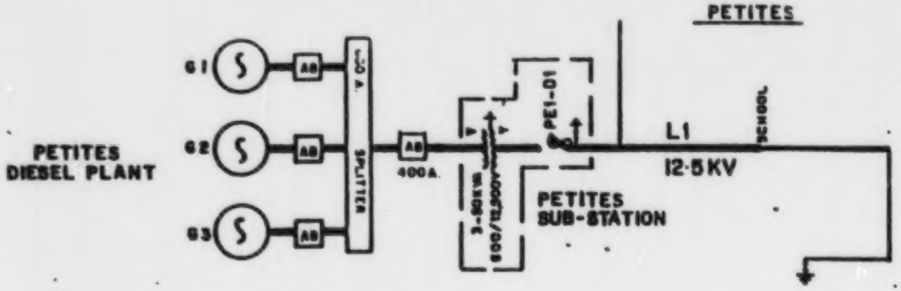
PETITES


PETITES
DIESEL PLANT
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G2
G3
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AB
AB
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SPLITTER
AB
400A.
3-50KVA
600/12,500V
PE1-01
PETITES
SUB-STATION
PETITES
L1
12·5KV
SCHOOL

APPROVED BY: W.F.R	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 of 1
DATE: 83-[illegible]-[illegible]	PETITES DISTRIBUTION SYSTEM	DWG. No. 501-1
REVISION No.: 3		

A. History and Current Status

1. N/A

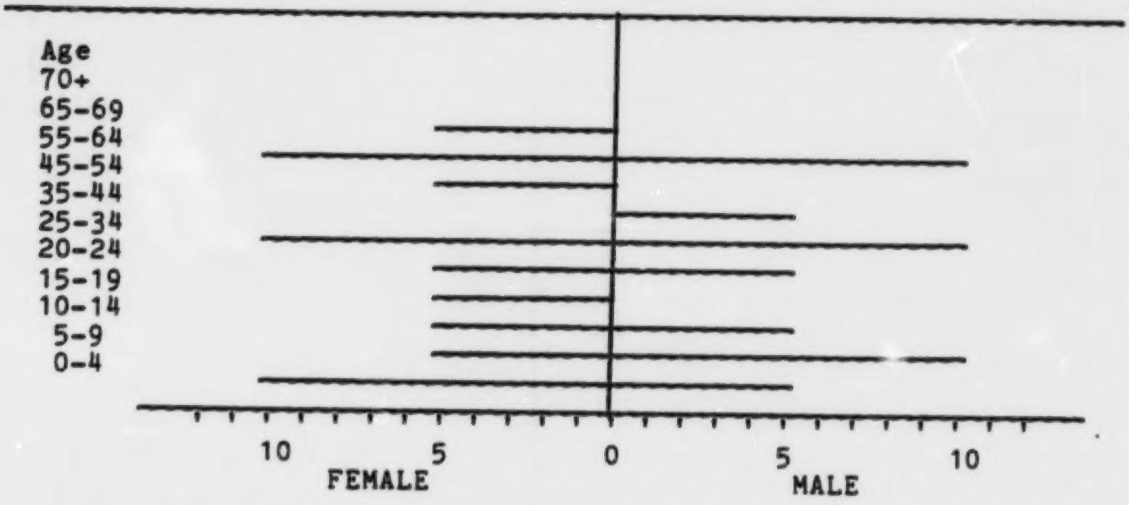
2. Demographics

1981 Population: 108

Projected Future Population Growth:

At 2% per annum: 1986 - 119 1991 - 130

Population Structure by Age and By Gender - 1981



No. of Females - 60 No. of Males - 48

Footnotes

There is a fairly young population: 68% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake _X_ River ____ Wells ____ Other __________

Distribution:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_ Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None _X_

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_

Disposal:

Lagoon _X_ Septic Tanks ___ Treatment Plant ___ None ___

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes ____ No _X_
Landfill Site Utilized: Yes ____ No _X_
Other: open dump Yes _X_ No ____

---

4. **Police Protection**

R.C.M.P.: Yes X No ____

Patrolled from: Channel/Port aux Basques

---

5. **Fire Protection Organized**

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. **Health**

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. **Education**

School located in community: Yes X No ____

Grades: Kindergarten to Grade 9

Size: N/A Classrooms: N/A Teachers: 2

---

3. **Residential**

(1) Number of occupied private dwellings: 30
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 30
(5) Number of rented homes: 0
(6) Number of single detached homes: 30
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 3.5
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. **Community/Institutional/Commercial/Industrial Buildings**

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes	No X	
Radio	Yes X	No	Various signals
Telephone	Yes X	No	radiophone
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars		X	
Heavy Vehicles		X	
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 2 - 100 kw Deutz with B.B.C. Generators
1 - 60 kw Cummins with Tamper Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	111 857	116,174
Annual Fuel Cost	$32,401.00	$38,892.00
Cost per Litre	$0.30	$0.33
Cost Increase		10%

4. Electricity Demand - Historical and Predicted (mwh):

1980	217	1985	303
1981	263	1986	303
1982	255	1987	303
1983	303	1988	303
1984	303		

5. Peak Load Demand - Historical and Predicted (kw):

1980	84	1985	105
1981	82	1986	105
1982	94	1987	105
1983	105	1988	105
1984	105		

H. ASSESSMENT OF RESOURCES - Petites

Small Scale Hydro Potential

There is one possible site located on Northwest Brook approximately 7.4 km. from the nearest transmission line. The site has a nominal capacity of 545 kw. through a head of approximately 15 M.

Wood Resources

The Petites area contains lands which have severe limitations that preclude the growth of commercial forests. The immediate area is nearly devoid of any trees. The main limitations are thin, stony soil, exposed rock, low fertility and exposure. Growths of less than 10 $ft.^3$ per acre per year can be expected. Timber rights are owned by the Crown in this area. The dominant species is black spruce.

The Statistics Canada data base estimates that approximately 10% of householders use wood as a primary heating fuel. The potential to increase the use of wood appears quite limited.

Peat Resources

No published fuel peat inventories are available for this area.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

With an Annual Equivalent Cost of energy of approximately $0.59 per kwh., small scale hydroelectric development compares unfavourably with diesel generated electricity at $0.25 per kwh.

The limited stands of black spruce in the area have limited potential as a fuelwood source.

The data base on peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Petites COMMUNITY: Petites

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	190 801	88 376	9 820		52
Commercial	9 707				
Industrial					
Government	11 281				
Street Lighting	7 331				
TOTAL	219 120	88 376	9 820		52

1982 ENERGY PROFILE

LOAD CENTER: Petites COMMUNITY: Petites

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	687	3 418	370		421	4 896
Commercial	35					35
Industrial						
Government	41					41
Street Lighting	26					26
TOTAL	789	3 418	370		421	4 998

7.9 REMOTE COMMUNITY ANALYSIS

Load Centre:	Petit Forte
Communities Serviced:	Petit Forte
Status:	Unincorporated
Location:	Lat: 47° 24' N
	Long: 54° 40' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

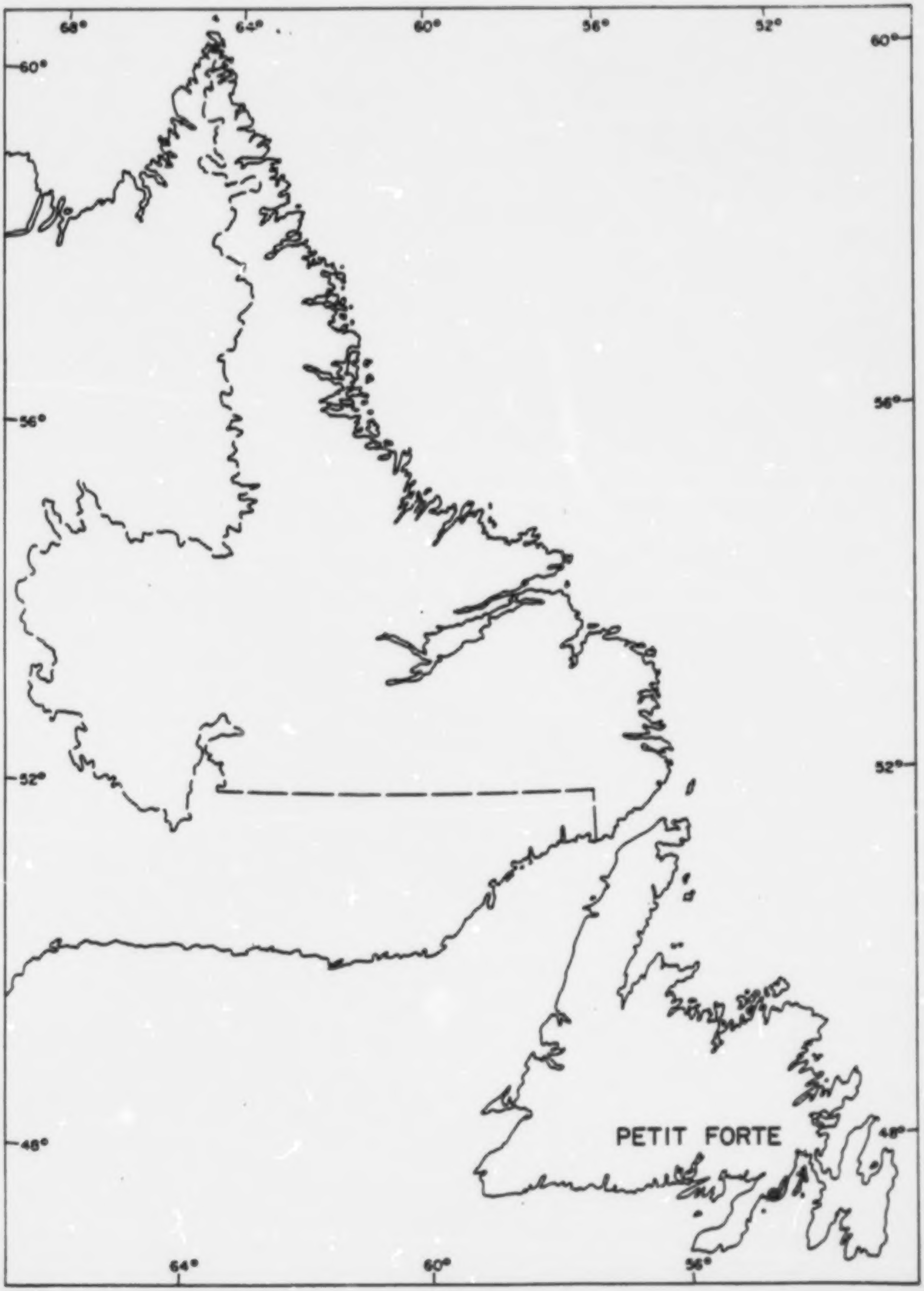
Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.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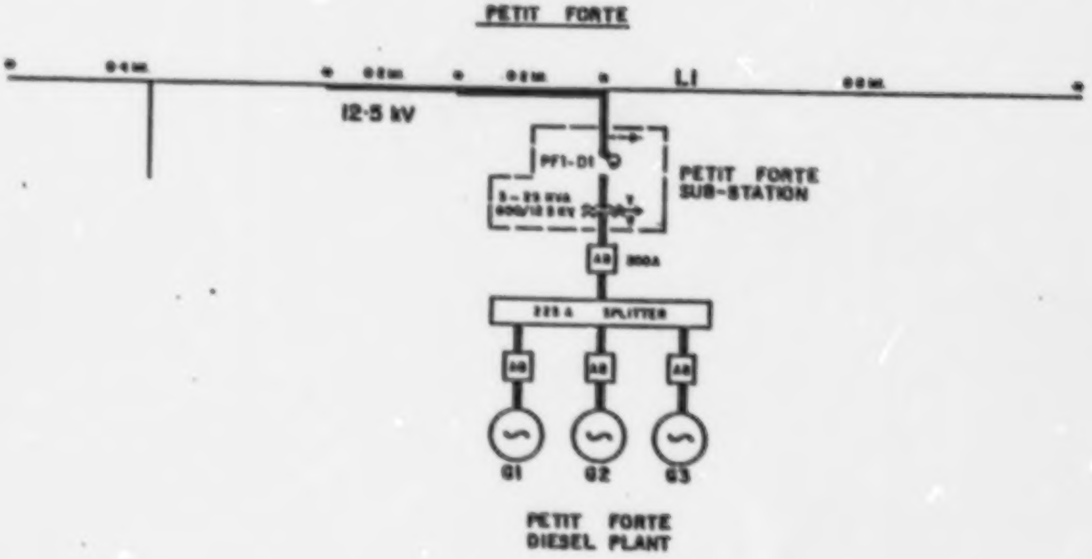

PETIT FORTE
L1
12·5 kV
PF1-D1
PETIT FORTE
SUB-STATION
AB
SPLITTER
AB
AB
AB
G1
G2
G3
PETIT FORTE
DIESEL PLANT

APPROVED BY: [illegible]	NEWFOUNDLAND AND LABRADOR HYDRO	[illegible]
DATE: [illegible]	PETIT FORTE DISTRIBUTION SYSTEM	DWG. No. 119-1
REVISION No.: [illegible]		

A. **History and Current Status**

1. N/A

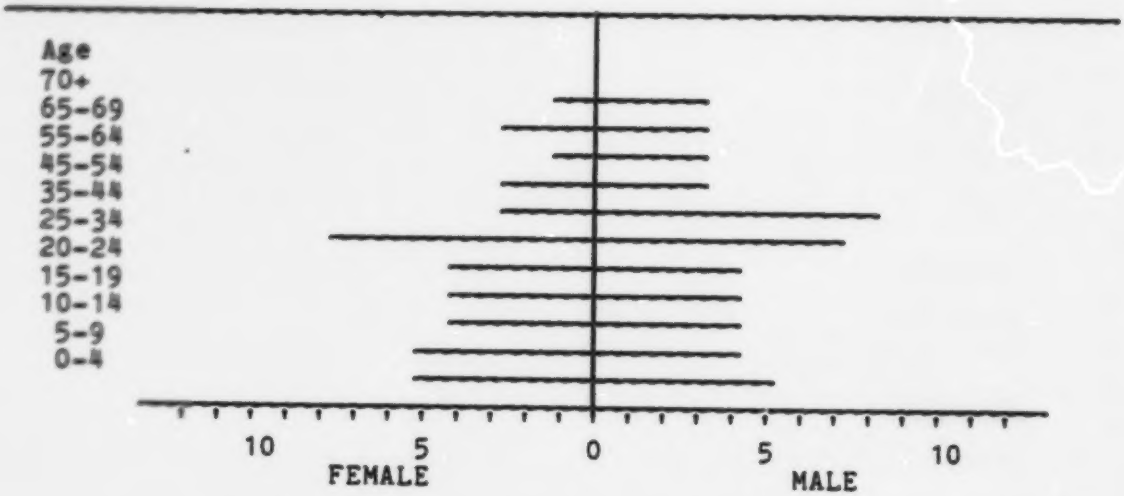
2. **Demographics**

1981 Population: 90

Projected Future Population Growth:

At 2% per annum: 1986 - 99 1991 - 108

Population Structure by Age and By Gender - 1981



No. of Females - 42 No. of Males - 48

Footnotes

There is a fairly young population: 65% is over the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake ____ River ____ Wells _X_ Other __________

Distribution:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_ Standpipes ___

Treatment:

Sedimentation ____ Filtration ____ Chlorination ____
Fluoridation ____ None _X_

---

2. Sewage

Collection System:

Pipe ____ Truck ____ Individual Systems _X_ None ____

Serving:

Government Buildings _X_ Commercial Buildings _X_ Residences _X_

Disposal:

Lagoon _X_ Septic Tanks ___ Treatment Plant ___ None ___

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes ____ No _X_
Landfill Site Utilized: Yes ____ No _X_
Other: open dump Yes _X_ No ____

4. Police Protection

R.C.M.P.: Yes __X__ No _____

Patrolled from: ____Burin____

---

5. Fire Protection Organized

Organized: Yes _____ No __X__

Equipment: ____None____

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes _____ No __X__

Size of Facility: ____________

Staff: Doctors: _____ Nurses: _____

Other: ____________

---

2. Education

School located in community: Yes __X__ No _____

Grades: ____Kindergarten to Grade 10____

Size: __N/A__ Classrooms: __N/A__ Teachers: __2__

3. Residential

(1) Number of occupied private dwellings: 23
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 22
(5) Number of rented homes: 1
(6) Number of single detached homes: 23
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 3.9
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC & NTV
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars		X	
Heavy Vehicles		X	
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 2 - 60 kw Deutz with Tamper Generator
1 - 136 kw Deutz with Tamper Generator

3. Diesel Fuel Consumption:

	1981	1982
Annual Fuel Use (litres)	120 088	126,259
Annual Fuel Cost	$36,771.00	$42,862.00
Cost per Litre	$0.31	$0.34
Cost Increase		10%

4. Electricity Demand - Historical and Predicted (mwh):

1980	233	1985	355
1981	220	1986	400
1982	238	1987	451
1983	280	1988	509
1984	315		

5. Peak Load Demand - Historical and Predicted (kw):

1980	64	1985	125
1981	72	1986	142
1982	88	1987	151
1983	98	1988	182
1984	111		

H. ASSESSMENT OF RESOURCES - Petit Forte

Small Scale Hydro Potential

There is one possible site located 2.1 km. from the nearest transmission line on Northwest Nonsuch Arm. It has a nominal capacity of 75 kw. through a head of approximately 4 M.

Wood Resources

The area surrounding Petit Forte contains lands which have severe limitations that preclude growth of commercial forests. Soils are shallow, stony and have low fertility. Rock outcrops abound. Some forest exists in the adjoining Northeast Nonsuch Arm, but the potential for sustained growth is less than 10 ft.3 per acre per year. The dominant species is black spruce. Timber rights are held by the Crown in this area.

The Statistics Canada data base for this area indicates that approximately 9% of householders use wood as a primary heating fuel. The potential for further usage of wood appears quite limited.

Peat Resources

In 1980 the Provincial Government inventoried the fuel peat reserves in the eastern region. This inventory does not single out Petit Forte; however, several nearby areas show promise. They are: Harbour Buffett with 200 hectares and 2 $M^3 \times 10^6$ of reserves, Sound Island with 3,100 hectares and 35 $M^3 \times 10^6$ of reserves, Terrenceville with 500 hectares and 5 $M^3 \times 10^6$ of reserves. The Petit Forte area has many barrens and bogs on the surrounding highlands which should contain reserves of fuel peat. This energy resource should be examined more closely.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

The only potential site for hydro-electric development in the Petit Forte area is uneconomical, with an Annual Equivalent Cost of $0.58 per kwh. as compared to $0.25 per kwh. for diesel generated electricity.

The very low growth potential and limited existing forest stands in the area suggest that there is minimal opportunity for increased exploitation of this resource.

The large number of barrens and bogs in the Petit Forte area indicates that fuel peat warrants closer examination.

The data base on wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Petit Forte COMMUNITY: Petit Forte

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	176 496	68 737	7 637		35
Commercial					
Industrial					
Government	31 751				
Street Lighting	13 068				
TOTAL	221 315	68 737	7 637		35

1982 ENERGY PROFILE

LOAD CENTER: Petit Forte COMMUNITY: Petit Forte

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	635	2 658	288		283	3 864
Commercial						
Industrial						
Government	114					114
Street Lighting	47					47
TOTAL	797	2 658	288		283	4 025

7.10 REMOTE COMMUNITY ANALYSIS

Load Centre: Ramea

Communities Serviced: Ramea

Status: Unincorporated

Location: Lat: 47° 31' N
Long: 57° 23' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

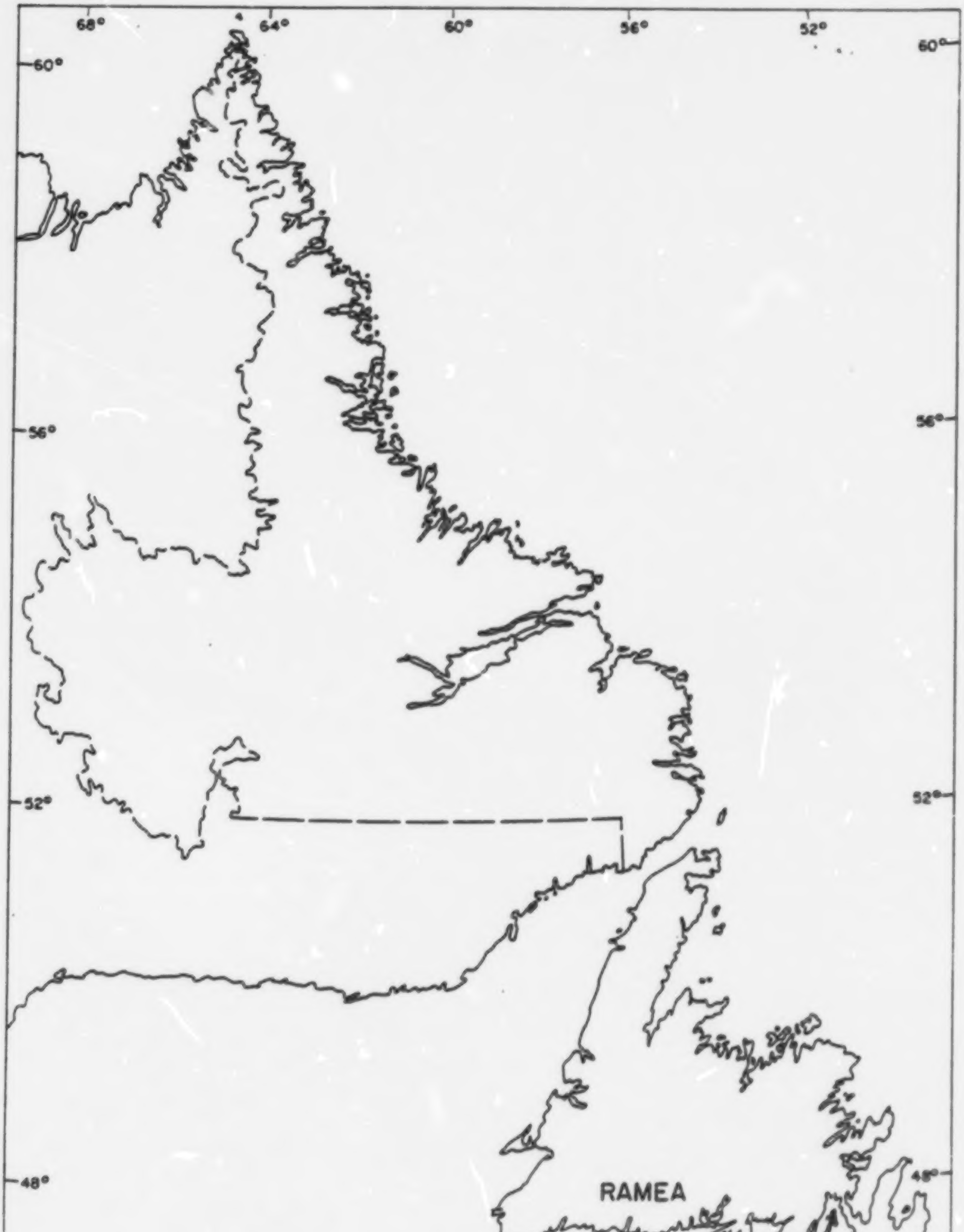
Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.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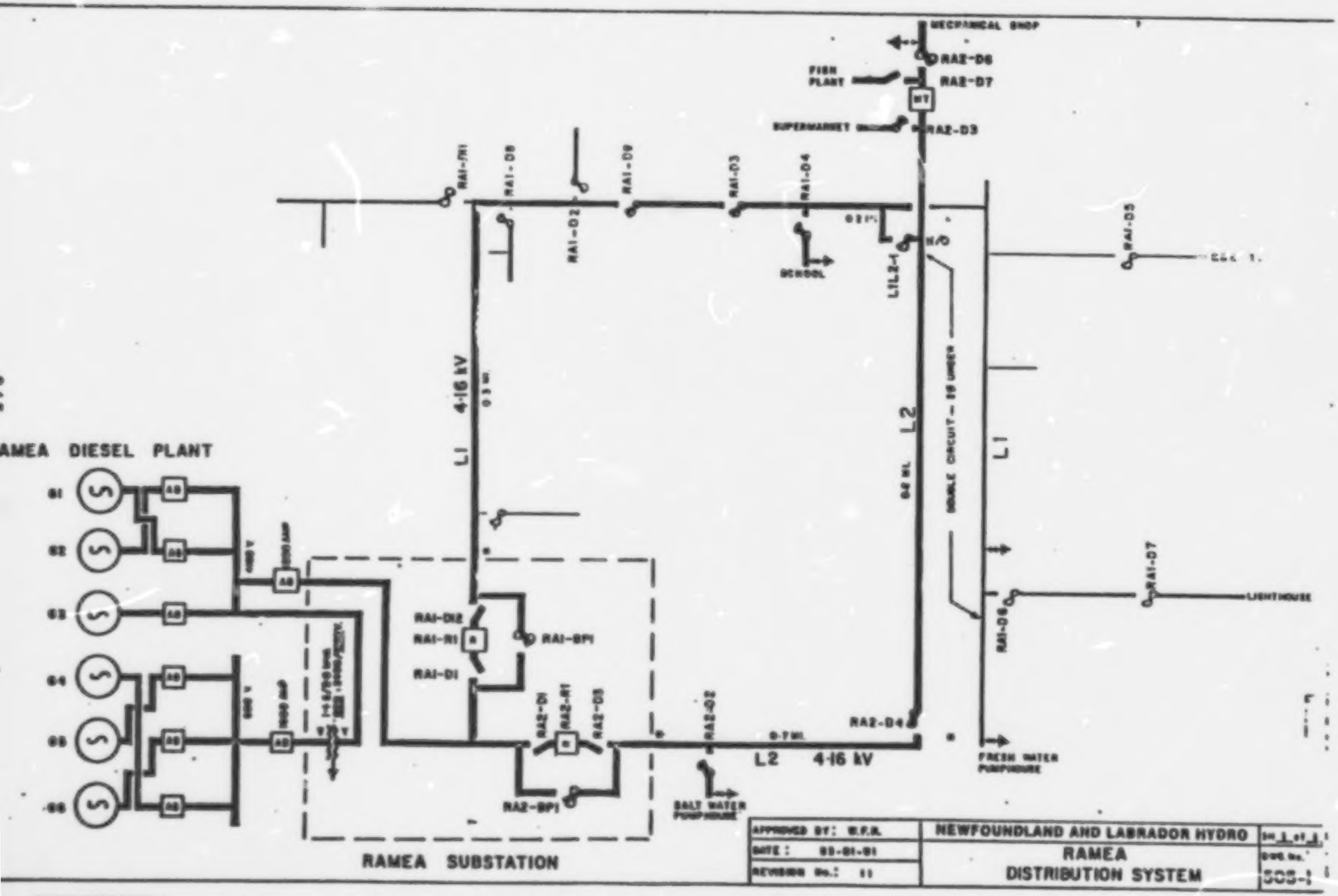
AMEA DIESEL PLANT
G1
G2
G3
G4
G5
G6
AB
RAMEA SUBSTATION
RAI-DI2
RAI-RI
RAI-DI
RAI-BPI
RA2-DI
RA2-RI
RA2-D5
RA2-BPI
RA2-D2
SALT WATER PUMPHOUSE
L1 4·16 kV
L2 4·16 kV
RA2-D4
L2
L1
DOUBLE CIRCUIT – 1S UNDER
RAI-RI
RAI-D8
RAI-D2
RAI-D9
RAI-D3
RAI-D4
SCHOOL
L1L2-1
N/O
MECHANICAL SHOP
RA2-D6
RA2-D7
FISH PLANT
SUPERMARKET
RA2-D3
RAI-D5
RAI-D6
RAI-D7
LIGHTHOUSE
FRESH WATER PUMPHOUSE
APPROVED BY: W.F.R.
DATE: 83-01-01
REVISION No.: 11
NEWFOUNDLAND AND LABRADOR HYDRO
RAMEA
DISTRIBUTION SYSTEM
SH 1 of 1
DWG No.
SOS-1

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 1386

Historic Population

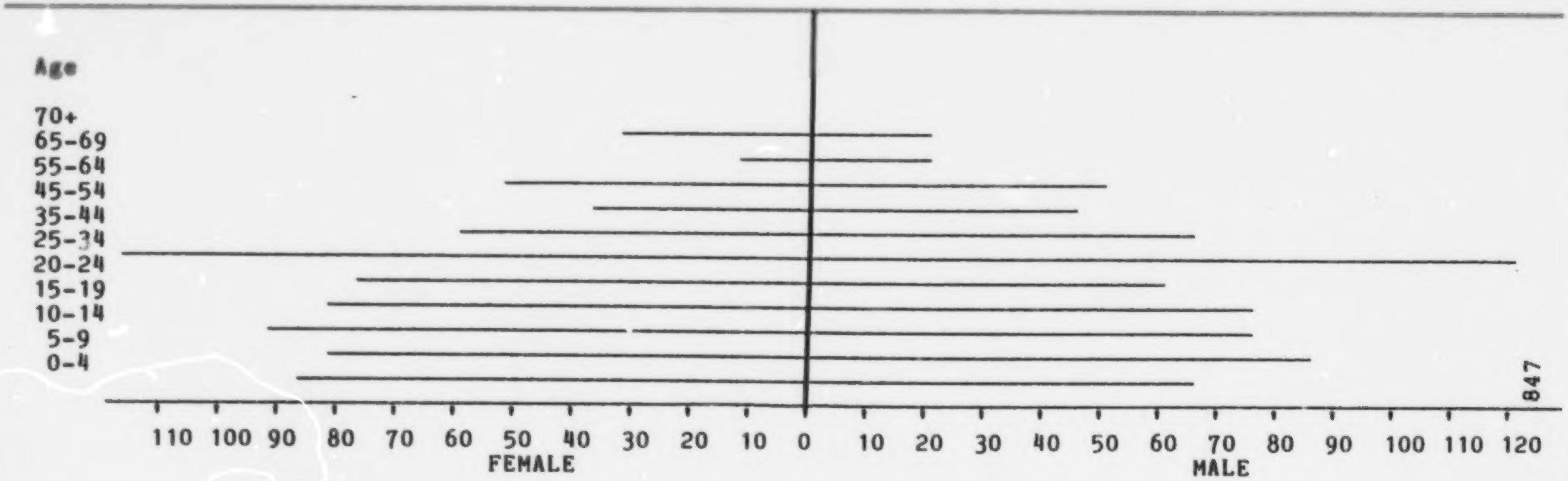
Year	Population	Increase	Growth %	Average Annual Growth %
1976	1226			
1981	1386	160	13.1	2.6

Scurce Note: 1981 Census of Canada.

Projected Future Population Growth:

1. At 2% per annum: 1986 - 1525 1991 - 1663

Population Structure by Age and By Gender - 1981



No. of Females - 705

No. of Males - 681

Footnotes

There is a fairly young population: 72% are under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ____ Wells ____ Other ____________

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration X Chlorination X

Fluoridation ____ None ____

---

2. Sewage

Collection System:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon ____ Septic Tanks X Treatment Plant X None ____

---

3. Solid Waste Disposal

Garbage Collection Organized:	Yes	X	No	
Landfill Site Utilized:	Yes	X	No	
Other:	Yes		No	X

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Burgeo

---

5. Fire Protection Organized

Organized: Yes X No ____

Equipment: hydrants

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____________

Staff: Doctors: ____ Nurses: ______

Other: ______________

---

2. Education

School located in community: Yes 2 No ____

Grades: Kindergarten to Grade 6; Grades 7 - 11

Size: N/A Classrooms: N/A Teachers: 8/12

3. Residential

(1) Number of occupied private dwellings: 330
(2) Number of houses with sewer and water:
(3) Housing Condition: 250, very good; 45 need minor repair; 35 need major repair
(4) Number of owned homes: 310
(5) Number of rented homes: 15
(6) Number of single detached homes: 310
(7) Number of single attached homes: 10
(8) Average number of persons per private household: 4.2
(9) Dwellings heated by steam or hot water: 30
(10) Dwellings heated by hot air: 110
(11) Dwellings heated with stove or space heater: 170
(12) Dwellings heated by electric heat: 0
(13) Other: wood 5

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC & NTV
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	Ramea Ferry Service	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type:
2 - 300 kw Lister with Tamper Generators
1 - 442 kw Lister with Tamper Generator
1 - 426 kw Lister with Tamper Generator
1 - 568 kw Lister with B.B.C. Generator
1 - 1000 kw Ruston-with G.E.C. Generator

3. **Diesel Fuel Consumption:**

	1981	1982
Annual Fuel Use (litres)	1,785,152	1,673,459
Annual Fuel Cost	$509,630.00	$616,228.00
Cost per Litre	$0.29	$0.37
Cost Increase		28%

4. **Electricity Demand - Historical and Predicted (mwh):**

1980	5971	1985	5888
1981	6314	1986	5888
1982	6276	1987	5888
1983	5888	1988	5888
1984	5888		

5. **Peak Load Demand - Historical and Predicted (kw):**

1980	1350	1985	1050
1981	1450	1986	1050
1982	1650	1987	1050
1983	1050	1988	1050
1984	1050		

H. ASSESSMENT OF RESOURCES - Ramea

Small Scale Hydro Potential

Available data indicates that there is no potential for small scale hydro development in this area.

Wood Resources

No forests exist on Ramea or adjacent islands. The area contains lands which preclude the growth of commercial forests because of rock outcroppings, shallow, stony soil, low fertility, and exposure. Growths of less than 10 $ft.^3$ per acre can be expected where trees grow. Timber rights are owned by the Crown.

The Statistics Canada data base shows that approximately 3% of householders use wood as a primary heating fuel. There appears to be limited potential to increase utilization of this resource.

Peat Resources

No published fuel peat inventories are available for this area.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

With no potential for small scale hydro-electric development, and no potential for the exploitation of wood resources, Ramea appears to have few alternative energy options.

The data base on peat, wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: Ramea COMMUNITY: Ramea

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	2 445 834	998 321	110 925		174
Commercial	374 108				
Industrial	2 289 600				
Government	457 243				
Street Lighting	65 439				
TOTAL	5 632 224	998 321	110 925		174

1982 ENERGY PROFILE

LOAD CENTER: Ramea COMMUNITY: Ramea

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	8 805	38 610	4 180		1 407	53 002
Commercial	1 347					1 347
ndustrial	8 243					8 243
Government	1 646					1 646
Street Lighting	236					236
TOTAL	20 276	38 610	4 180		1 407	64 474

7.11 REMOTE COMMUNITY ANALYSIS

Load Centre: Rencontre East

Communities Serviced: Rencontre East

Status: Incorporated

Location: Lat: 47° 38' N
Long: 55° 12' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

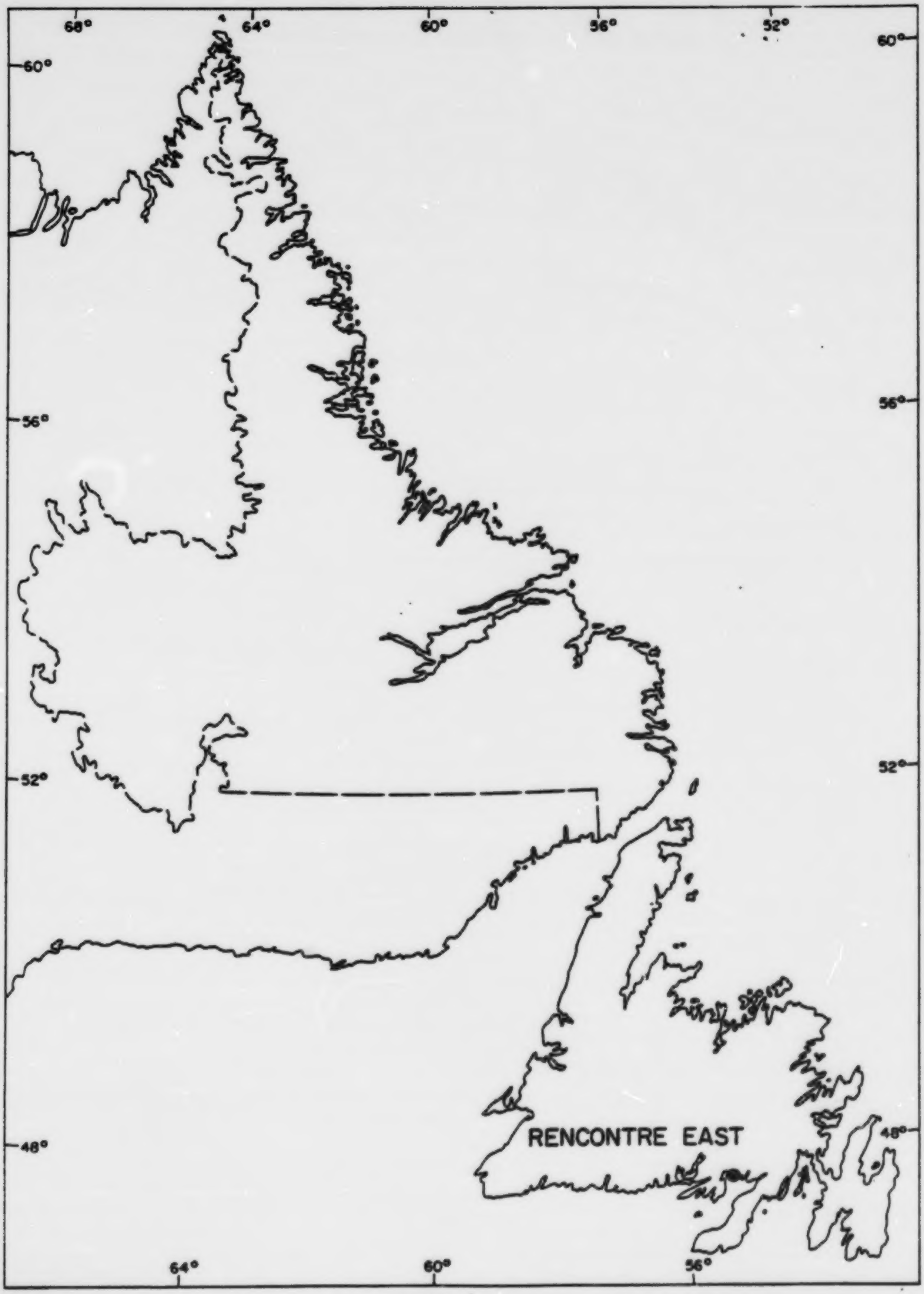
Department of Municipal Affairs and Housing, May and June 1983.

Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.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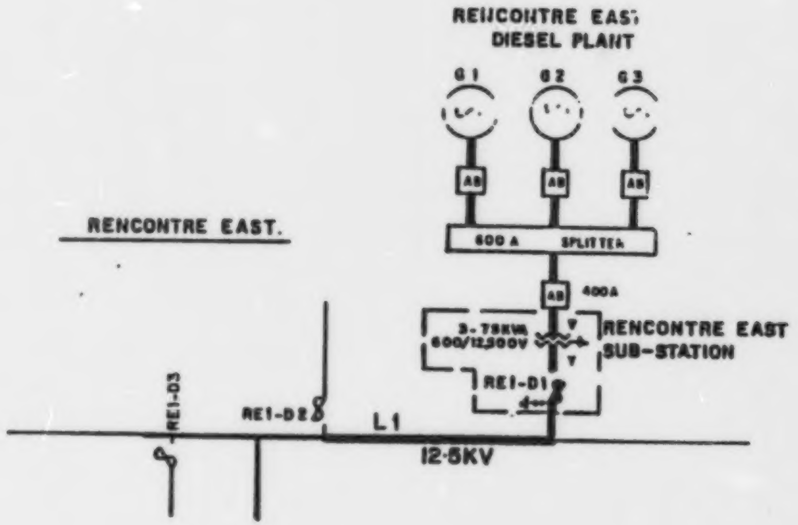

RENCONTRE EAST
DIESEL PLANT
G 1
G 2
G 3
AB
AB
AB
600 A
SPLITTER
AB
400A
3-75KVA
600/12,500V
RENCONTRE EAST
SUB-STATION
RE1-D1
L1
12·5KV
RE1-D2
RE1-D3

APPROVED BY: W.F.B	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 of 1
DATE: 83-01-11	RENCONTRE..EAST DISTRIBUTION SYSTEM	DWG. No. 117-1
REVISION No.: 0		

5

A. History and Current Status

1. N/A

2. Demographics

1981 Population: 230

Historic Population

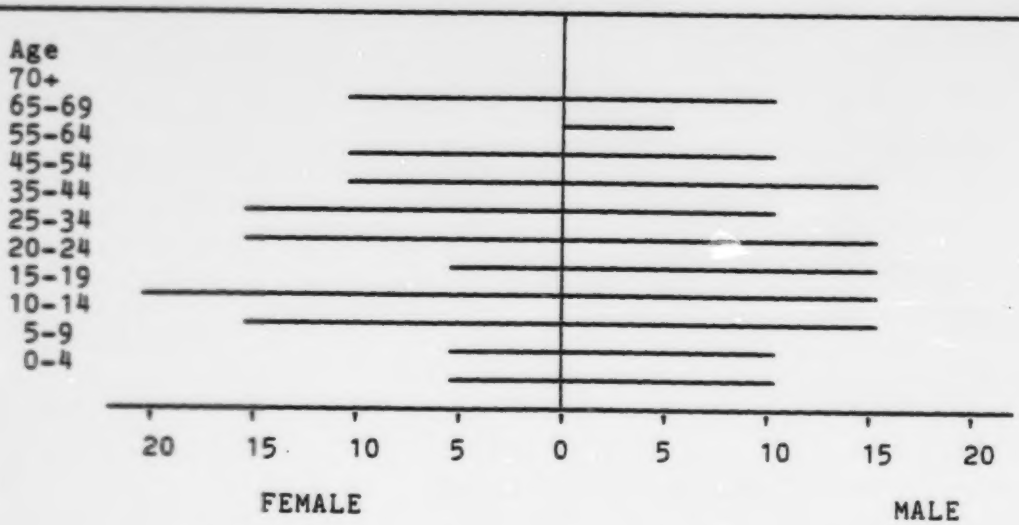
Year	Population	Increase	Growth %	Average Annual Growth %
1976	214			
1981	230	16	7.5	1.5

Source Note: 1981 Census of Canada.

Projected Future Population Growth:

1. At 2% per annum: 1986 - 253 1991 - 276

Population Structure by Age and By Gender - 1981



No. of Females - 110

No. of Males - 120

Footnotes There is a fairly young population. Over 70% is under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake X River ____ Wells ____ Other ____________

Distribution:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X Standpipes ____

Treatment:

Sedimentation ____ Filtration X Chlorination X

Fluoridation ____ None ____

---

2. Sewage

Collection System:

Pipe X Truck ____ Individual Systems ____ None ____

Serving:

Government Buildings X Commercial Buildings X Residences X

Disposal:

Lagoon x Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized: Yes X No ____

Landfill Site Utilized: Yes ____ No X

Other: incinerator Yes X No ____

4. Police Protection

R.C.M.P.: Yes X No ____

Patrolled from: Harbour Breton

---

5. Fire Protection Organized

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. Health

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. Education

School located in community: Yes X No ____

Grades: Kindergarten to Grade 11

Size: N/A Classrooms: N/A Teachers: 4

---

3. Residential

(1) Number of occupied private dwellings: 55
(2) Number of houses with sewer and water:
(3) Housing Condition: 25, very good; 10 need minor repair; 15 need major repair
(4) Number of owned homes: 55
(5) Number of rented homes: 5
(6) Number of single detached homes: 55
(7) Number of single attached homes:
(8) Average number of persons per private household: 4.1
(9) Dwellings heated by steam or hot water: 0
(10) Dwellings heated by hot air: 15
(11) Dwellings heated with stove or space heater: 35
(12) Dwellings heated by electric heat: 5
(13) Other: 0

4. Community/Institutional/Commercial/Industrial Buildings

N/A

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

			Comments
Post Office	Yes X	No	local
Television	Yes X	No	CBC & NTV
Radio	Yes X	No	Various signals
Telephone	Yes X	No	Exchange service
High Frequency Radio	Yes	No X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	CN Coastal Boats	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars		X	
Heavy Vehicles		X	
Other		X	

G. DIESEL ELECTRIC GENERATION

1. Owner: Newfoundland and Labrador Hydro/Power Distribution District

2. Diesel Type: 1 - 60 kw Cat. with Tamper Generator
2 - 136 kw Cat. with B.B.C. Generators

3. **Diesel Fuel Consumption:**

	1981	1982
Annual Fuel Use (litres)	192,924	189,864
Annual Fuel Cost	$67,509.00	$70,015.00
Cost per Litre	$0.35	$0.37
Cost Increase	--	6%

4. **Electricity Demand - Historical and Predicted (mwh):**

1980	454	1985	834
1981	497	1986	949
1982	570	1987	1082
1983	686	1988	1235
1984	738		

5. **Peak Load Demand - Historical and Predicted (kw):**

1980	144	1985	233
1981	128	1986	257
1982	153	1987	308
1983	176	1988	354
1984	202		

H. ASSESSMENT OF RESOURCES - Rencontre East

Small Scale Hydro Potential

There are three possible sites within approximately 9 km. of the nearest transmission line. The closest is at Northwest Cove, approximately 7.2 km. from the community. It has a nominal capacity of 450 kw. through a head of approximately 65 M. Next is a site at Spout Brook, 8 km. from the community, with a nominal capacity of 3.25 mw. through a head of approximately 120 M. The most distant of the three sites is at Isle a Glu Pond, 8.5 km. from the community. This site has a nominal capacity of 950 kw. through a head of apprxoimately 49 M.

Wood Resources

The area surrounding Rencontre East contains lands which have severe limitations that preclude growth of commercial forests. Soils are shallow, with frequent rock outcrops. They are stony and of low fertility. No forests exist in the area. Most of the land surface is either barrens or bogs. Where trees grow, growth of less than 10 ft.^{3} per acre per year can be expected. Timber rights are owned by the Crown in this area.

The Statistics Canada data base indicates that 9% of householders use wood as a primary energy source. The potential to increase the use of wood as a fuel source appears limited.

Peat Resources

The Provincial Government's 1982 inventory of fuel peat resources shows that there is a potential of 500 hectares with 5 $M^3 \times 10^6$ of reserves in the nearby Terrenceville area. Rencontre East is surrounded by barrens and bogs, and should show potential for fuel peat. This energy resource should be examined more closely.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

In general, due to the very rugged terrain in the Rencontre East area, small scale hydro development would be very costly. It is estimated that the most promising site (1.0 mw) at Spout Brook could be partially developed, with a capital cost of between $1.0 and $1.4 million. The Annual Equivalent Cost of hydro electricity of $0.41 per kwh., however, would be unattractive in comparison with $0.25 per kwh. for diesel generated electricity.

The lack of forests in the Rencontre East area indicates that there is no potential for increased utilization of this resource in this area.

The data base on wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

The only option which shows some potential is peat, and it is therefore recommended that this alternative receive more detailed attention.

1982 ENERGY PROFILE

LOAD CENTER: Rencontre East COMMUNITY: Rencontre East

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	411 595	163 659	18 184		87
Commercial	16 400				
Industrial					
Government	22 636				
Street Lighting	21 384				
TOTAL	472 015	163 659	18 184		87

1982 ENERGY PROFILE

LOAD CENTER: Rencontre East COMMUNITY: Rencontre East

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	1 482	6 330	685		704	9 201
Commercial	59					59
Industrial						
Government	81					81
Street Lighting	77					77
TOTAL	1 699	6 330	685		704	9 418

7.12 REMOTE COMMUNITY ANALYSIS

Load Centre: South East Bight

Communities Serviced: South East Bight

Status: Unincorporated

Location: Lat: 47° 23' N

Long: 54° 35' W

Sources of Information:

Publications and Articles

Place Name Codes of Newfoundland and Labrador, January 1981.

Selected Characteristics - Newfoundland - 1981 Census of Canada.

Interviews and Correspondence

Newfoundland Statistics Agency, May 1983.

Statistics Canada, May 1983.

Newfoundland and Labrador Hydro/Power Distribution District, May 1983.

Royal Canadian Mounted Police, June 1983.

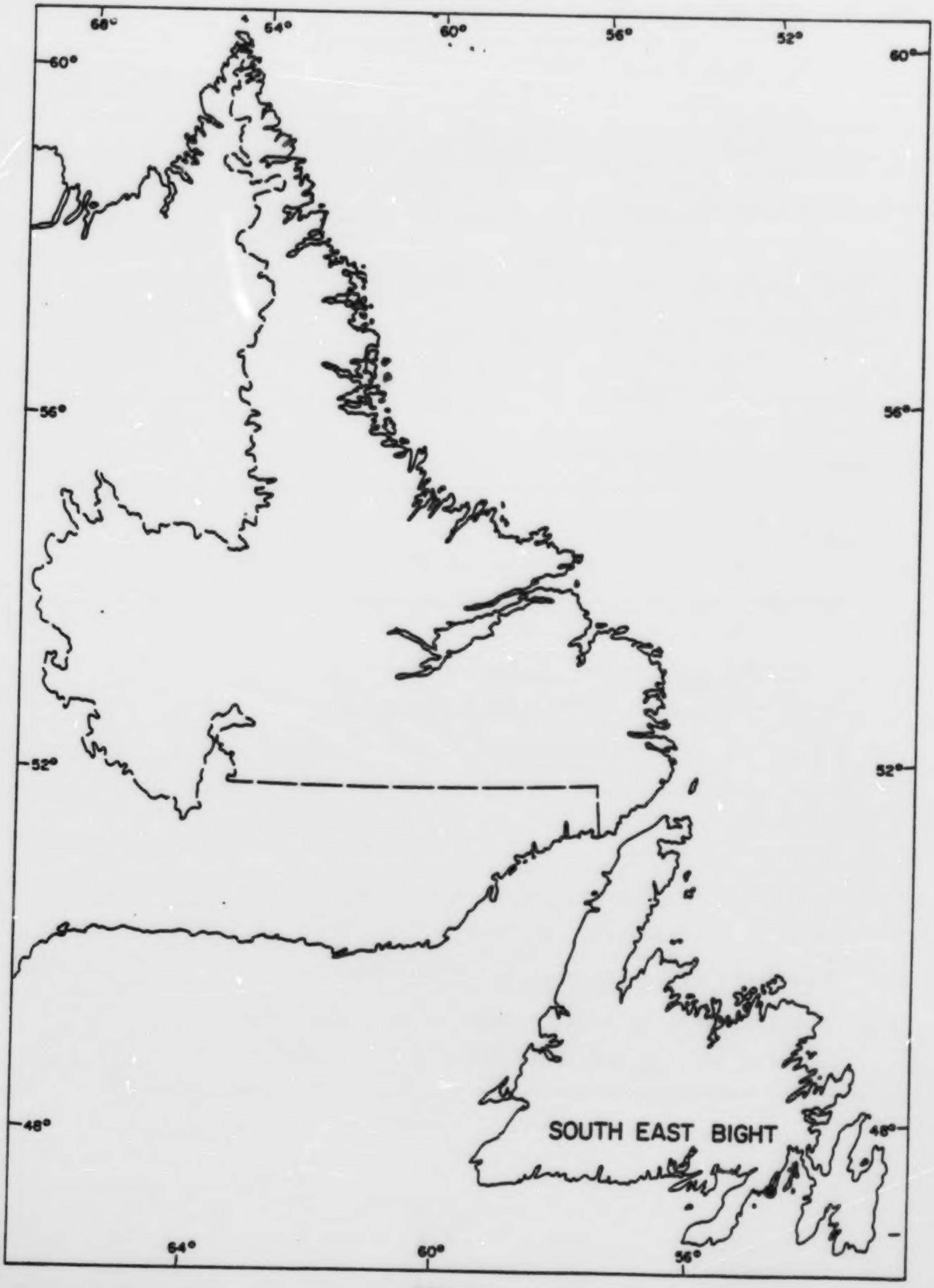
Department of Municipal Affairs and Housing, May and June 1983.

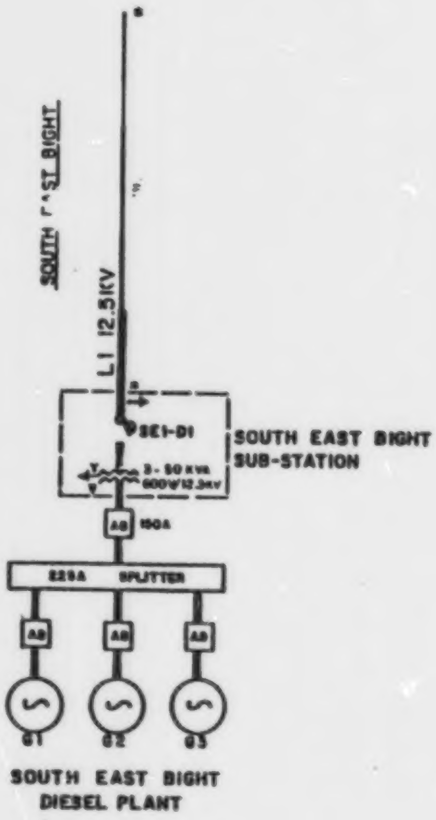
Department of Health, June 1983.

Department of Transportation, June 1983.

Intergovernmental Affairs Secretariat, June 1983.

Imperial Oil Limited, July 1983.


68°
64°
60°
56°
52°
60°
60°
56°
56°
52°
52°
48°
48°
SOUTH EAST BIGHT
64°
60°
56°


SOUTH EAST BIGHT
L1 12.5KV
SE1-D1
SOUTH EAST BIGHT
SUB-STATION
3 - 50 KVA
600V/12.5KV
AB
150A
229A SPLITTER
AB
AB
AB
G1
G2
G3
SOUTH EAST BIGHT
DIESEL PLANT

APPROVED BY: W.F.B	NEWFOUNDLAND AND LABRADOR HYDRO	SH 1 of 1
DATE: 83-01-11	SOUTH EAST BIGHT DISTRIBUTION SYSTEM	DWG. No.
REVISION No.: 4		11B-1

4

A. History and Current Status

1. N/A

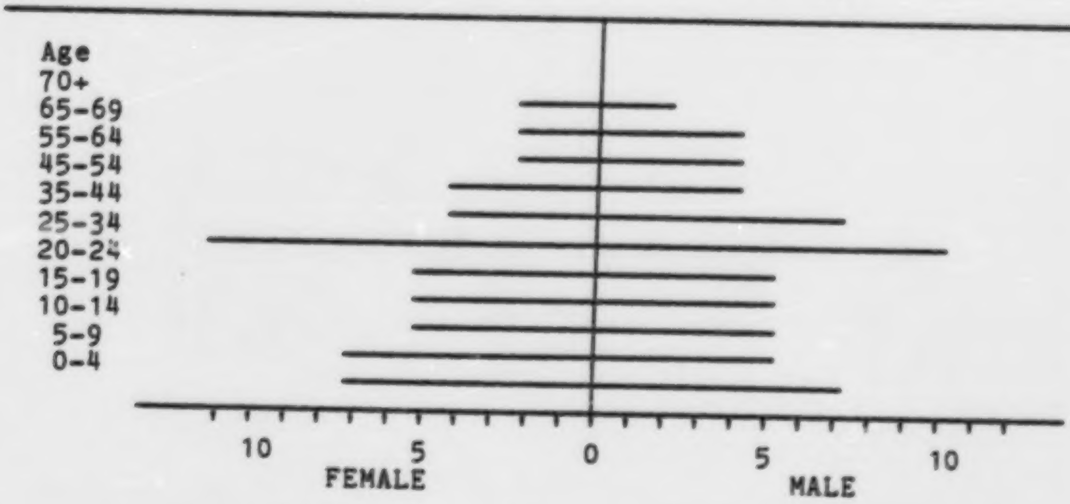
2. **Demographics**

1981 Population: 115

Projected Future Population Growth:

At 2% per annum: 1986 - 127 1991 - 138

Population Structure by Age and By Gender - 1981



No. of Females - 58 No. of Males - 57

Footnotes

There is a fairly young population: 68% are under the age of 35.

Source Note: 1981 Census of Canada.

B. COMMUNITY SERVICES

1. Water

Source:

Lake _____ River _____ Wells __X__ Other _____________

Distribution:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__ Standpipes ___

Treatment:

Sedimentation _____ Filtration _____ Chlorination _____
Fluoridation _____ None __X__

---

2. Sewage

Collection System:

Pipe _____ Truck _____ Individual Systems __X__ None _____

Serving:

Government Buildings __X__ Commercial Buildings __X__ Residences __X__

Disposal:

Lagoon __X__ Septic Tanks ____ Treatment Plant ____ None ____

---

3. Solid Waste Disposal

Garbage Collection Organized:	Yes _____	No __X__
Landfill Site Utilized:	Yes _____	No __X__
Other: open dump	Yes __X__	No _____

4. **Police Protection**

R.C.M.P.: Yes X No ____

Patrolled from: Burin

---

5. **Fire Protection Organized**

Organized: Yes ____ No X

Equipment: None

C. COMMUNITY FACILITIES

1. **Health**

Clinic in Community: Yes ____ No X

Size of Facility: ____

Staff: Doctors: ____ Nurses: ____

Other: ____

---

2. **Education**

School located in community: Yes X No ____

Grades: Kindergarten to Grade 10

Size: N/A Classrooms: N/A Teachers: 2

---

3. Residential

(1) Number of occupied private dwellings: 30
(2) Number of houses with sewer and water: N/A
(3) Housing Condition: N/A
(4) Number of owned homes: 28
(5) Number of rented homes: 2
(6) Number of single detached homes: 30
(7) Number of single attached homes: 0
(8) Average number of persons per private household: 3.9
(9) Dwellings heated by steam or hot water: N/A
(10) Dwellings heated by hot air: N/A
(11) Dwellings heated with stove or space heater: N/A
(12) Dwellings heated by electric heat: N/A
(13) Other: N/A

4. Community/Institutional/Commercial/Industrial Buildings

D. ECONOMIC ACTIVITIES

N/A

E. COMMUNICATION LINKS

	Yes	No	Comments
Post Office	X		local
Television	X		CBC and NTV
Radio	X		Various signals
Telephone	X		Exchange service
High Frequency Radio		X	

Operated By:

F. TRANSPORTATION LINKS

1. Access to Community By Scheduled Services

	Carrier	Type
Air	Not Available	
Marine	CN Marine	Scheduled
Bus	Not Available	
Other	Not Available	

2. Local Transportation

	Yes	No	Type
Boats	X		
Snowmobiles		X	
Cars	X		
Heavy Vehicles	X		
Other		X	

G. DIESEL ELECTRIC GENERATION

1. **Owner**: Newfoundland and Labrador Hydro/Power Distribution District

2. **Diesel Type**: 3 - 60 kw Deutz with Tamper Generators

3. **Diesel Fuel Consumption**:

	1981	1982
Annual Fuel Use (litres)	87 487	90,739
Annual Fuel Cost	$25,379.00	$30,266.00
Cost per Litre	$0.29	$0.33
Cost Increase		19%

4. **Electricity Demand - Historical and Predicted (mwh)**:

1980	153	1985	180
1981	161	1986	180
1982	179	1987	180
1983	180	1988	180
1984	180		

5. **Peak Load Demand - Historical and Predicted (kw)**:

1980	58	1985	54
1981	50	1986	54
1982	54	1987	54
1983	54	1988	54
1984	54		

H. ASSESSMENT OF RESOURCES - South East Bight

Small Scale Hydro Potential

There is one possible site located at Little Bona Cove, approximately 2.4 km. from the nearest transmission line. It has a nominal capacity of 35 kw. through a head of approximately 4 M.

Wood Resources

The area surrounding South East Bight contains lands which have severe limitations that preclude growth of commercial forests. Soils are shallow, with frequent rock outcrops, stony and generally of low fertility. The inventory maps do not show any significant tree growth. The surrounding area is mostly barrens with scrub growth. Timber rights are owned by the Crown.

The Statistics Canada data base estimates that approximately 10% of householders use wood as a primary heating fuel. The potential to increase the use of wood appears limited.

Peat Resources

In 1980 the Provincial Government inventoried the fuel peat reserved in the eastern region. This inventory does not single out South East Bight. However, several locations in the general area show promise, including Harbour Buffett (an island) with 200 hectares and 2 $M3 \times 10^6$ of reserves, Sound Island with 3,100 hectares and 35 $M^3 \times 10^6$ of reserves, and Terrenceville with 500 hectares and 5 $M3 \times 10^6$ of reserves. The South East Bight area with its surrounding barrens and bogs should also show promise for fuel peat reserves and this should be examined more closely in future studies.

Wind Resources

The published data base on the wind regime for this area is insufficient to formulate definitive conclusions about this alternative.

Cogeneration - District Heating

Information obtained from Newfoundland and Labrador Hydro indicates that there is no potential for this alternative in this area.

Conservation Measures

No data base exists to evaluate conservation options.

Assessment

The small scale hydro site at Little Bona Cove has an Annual Equivalent Cost for electricity of $1.08 per kwh. and is clearly not economical when compared to $0.25 per kwh. for diesel generated electricity.

The wood reserves of the area are quite limited and suggest that there is little potential for increased exploitation.

The barrens and bogs in the South East Bight area show promise and should be examined to determine their potential for fuel peat.

The data base on wind and the potential for conservation is either non-existent or inadequate to seriously evaluate these options. More detailed research and analysis would have to be conducted before these options could be promoted or dismissed as potential contributors to heating and/or electrical generation requirements.

1982 ENERGY PROFILE

LOAD CENTER: South East Bight COMMUNITY: South East Bight

	ELECTRICITY (kwh)	FURNACE OIL (litres)	STOVE OIL (litres)	HEAVY FUEL OIL (litres)	FUELWOOD (tonnes)
Residential	140 866	88 376	9 820		52
Commercial					
Industrial					
Government					
Street Lighting	10 409				
TOTAL	151 275	88 376	9 820		52

1982 ENERGY PROFILE

LOAD CENTER: South East Bight COMMUNITY: South East Bight

	ELECTRICITY (GJ)	FURNACE OIL (GJ)	STOVE OIL (GJ)	HEAVY FUEL OIL (GJ)	FUELWOOD (GJ)	TOTAL (GJ)
Residential	507	3 418	370		421	4 716
Commercial						
Industrial						
Government						
Street Lighting	37					37
TOTAL	544	3 418	370		421	4 753

APPENDIX A

RELEVANT GOVERNMENT ENERGY PROGRAMS

FED./PROV.	Canada - Newfoundland Conservation and Renewable Energy Demonstration Agreement (CREDA)
FED.	Energy Conservation Research and Development
FED.	Ener$ave Advisory Service Program
FED.	Canadian Home Insulation Program (CHIP)
FED.	Super Energy Efficient Housing Demonstration Program
FED.	Canadian Oil Substitution Program (COSP)
FED.	Enhanced Conservation Assistance Program (ECAP)
FED.	Motor Vehicle Fuel Consumption Program
FED.	Industrial Energy Research and Development (IERD)
FED.	Class 34 Energy Conservation Equipment Fast Write-Off
FED.	Industrial Conservation Task Force Program
FED.	Atlantic Energy Conservation Investment Program (AECIP)
FED.	Building Technology Support Program
FED.	Commercial Sector Task Force Program
FED.	Forest Industry Renewable Energy (FIRE)
FED.	Internal Retrofit Program
FED.	Internal Off-Oil Program
FED.	Development and Demonstration of Resource and Energy Conservation Technology (DRECT)
FED.	Energuide-Energy Consumption Labelling of Appliances
FED.	Small Projects Fund
FED.	Ridesharing Centre
FED.	Driver Outreach

FED.	Truck Program
FED.	Propane Vehicle Conversion Program
FED.	Federal Propane Vehicle Conversion Program
FED.	Internal Energy Conservation Program
FED.	Residential Rehabilitation Assistance Program (RRAP)
FED.	Housing Technology Incentives Program
FED.	Heating Costs and Minimum Qualifying Income
FED.	National Energy Audit Program
FED.	Energy Bus Program
FED.	Remote Community Demonstration Program
FED.	Residential Insulation Contractor Certification Listing Program

APPENDIX B

METHODOLOGY FOR CONDUCTING ENERGY SUPPLY AND DEMAND ANALYSIS IN REMOTE COMMUNITIES

Energy Supply and Demand Forecasting - Summary and General Methodology

In forecasting the demand for energy there are a number of activities which must be undertaken regardless of the sector being studied. Firstly, the analyst must identify all the variables which may affect the demand for energy in the particular sector under study. Secondly, it is necessary to conduct research to collect and prepare the available data. Thirdly, from the data base available one must then formulate theories which attempt to logically explain the relationship between variables in the context of their effect on energy demand. From this process the analyst should develop equations which best explain and predict energy demand. It should be remembered that the equation specification process must not only satisfy statistical analysis requirements, but also reflect sound intuitive judgement.

Once the demand for energy has been determined, the process of assessing supply options to meet that demand is required. The appropriate selection of energy supply options is dependent on many factors. The analyst must take into account the social, economic, financial and general environmental considerations of each alternative before a final decision can be made.

Finally, the analyst must be aware that the process followed in forecasting energy demand and supply is not one where these activities are mutually exclusive. Whereas the level of demand for energy can be treated as an independent variable under differing scenarios, the supply options available to satisfy that demand are predicated on two general considerations. Firstly, how much flexibility exists, taking into consideration the structural conditions associated with the demand for energy in a particular sector, eg., is oil the only major supply option, given the structural nature of the demand for energy in the industrial sector? Secondly, if there is an abundance in the potential supply of a certain energy source, eg., natural gas in Canada, or hydro in Newfoundland, this can lead to a situation where supply options are the principal factors affecting the make-up of energy demand.

Residential Sector Demand

(i) Variable Identification

In analyzing the demand for energy in the residential sector in remote communities some of the variables to be taken into consideration include: historical net energy demand by energy form (conventional and alternative), historical households by main type of heating fuel and heating equipment, average energy consumption by energy form by household, historical and future energy prices by energy form, weighted historical and future energy prices, historical and future personal disposable income, historical and future population and household formation statistics, historical number of households by major types of appliances, future increased appliance efficiency estimates, level and extent of energy conservation initiatives, future space heating requirements, etc.

(ii) Research

In order to obtain the information cited above, a number of public and private agencies would have to be contacted and a certain amount of field research conducted. Public agencies such as Statistics Canada, Energy, Mines and Resources Canada, the Newfoundland Statistics Agency, Newfoundland Department of Mines and Energy are the most noteworthy government organizations. The provincial Crown corporation, Newfoundland and Labrador Hydro, would also supply valuable data. Private agencies such as Newfoundland Light and Power and the various oil suppliers would represent important sources of supply and consumption data. Field research would be necessary in order to collect data on conventional and alternative energy consumption patterns, eg. wood, homeowner trends in energy conservation practices, householder income, appliance levels, and other factors which would affect energy demand, such as the condition of a dwelling.

(iii) Theory Formulation

This activity is ultimately the most important and requires consistent and detailed attention. From the information which is obtained during the research phase the analyst must develop and test theories to explain and predict demand. This process is normally quite involved, as a number of equations have to be formulated and tested before the analyst can be certain which equation or series of equations best predicts demand.

Commercial Sector

(i) Variable Identification

The diversity of organizations and facilities included in what is classified as 'commercial' presents serious problems for analysts attempting to understand and predict demand for this sector. In general terms, the aggregated manner in which data is available for this sector makes it impossible, without expending considerable monies, to disaggregate the commercial sector in a way to make detailed and meaningful forecasts. Conventional methodology has therefore relied on evaluating macro-level indicators such as the historic demand for energy by energy form, historic and future individual and weighted average energy prices, and historic and future Real Domestic Product for the commercial sector. In the context of remote communities, the most plausible way to approach forecasting commercial sector energy demand would be to contact organizations directly. For most remote communities in Newfoundland and Labrador the number of commercial facilities averages 8 - 10. Consequently, field research is the most appropriate method to use in understanding historical and present energy consumption patterns and to estimate future requirements.

(ii) Research

In the context of remote communities the most appropriate method of collecting the required data is to conduct field research.

(iii) Theory Formulation

Unlike the residential sector, where a number of variables and hence relationships can be formulated and tested, the commercial sector in the context of remote communities in Newfoundland and Labrador can best be understood and predicted by extrapolating the information obtained from direct field research.

Industrial Sector

(i) Variable Identification

As is the case with the commercial sector, the number of activities classified as industrial is quite small. Whereas in a society with a large and complex industrial infrastructure the analyst is required to utilize models to predict sub-sector behaviour, the limited size of the industrial sector in Newfoundland, and especially in remote communities, permits the analyst to collect the required information directly.

(ii) Research

For the industrial sector in remote communities the most appropriate method of collecting historical and present data, and of understanding those factors which may affect future demand, is to conduct field research.

(iii) Theory Formulation

The most logical and simple way to understand and predict industrial sector demand is to extrapolate the information obtained from direct field research.

Transportation Sector

(i) Variable Identification

The transportation sector is normally divided into four major categories: road, rail, air and marine. In the context of remote communities the relevant categories vary depending upon geographical location in the province. In almost all cases rail is non-applicable. Road is non-applicable for most communities located on the southern coast of Newfoundland and the coastal area of Labrador. Non-applicable in this context does not mean these communities are without roads, but simply that they have no connecting roads to major highways, and consequently the number of automobiles and trucks in use is normally quite low. Air transportation is applicable primarily for the coastal communities of Labrador, which have scheduled air services. For these coastal Labrador communities and other remote communities throughout the province, air transportation services can also be chartered. Marine transportation is the most important transportation medium for most communities, both in terms of local transportation needs and links to the outside world. The utilization of skidoos for local transportation purposes is also important for the coastal Labrador communities.

In the context of understanding and predicting transportation field requirements in remote communities, the variables to be identified are limited. As referenced above, rail transportation is non-applicable. Air transportation services are provided from the outside, and consequently fuel requirements for this purpose are not relevant to remote communities. Marine transportation services are similar to air services in that they are normally provided by an external agency, i.e., C.N., and consequently are not relevant to local marine transportation needs. Marine transportation requirements at the community level involve the utilization of vessels for primary fishing and general local transportation needs. In order to understand and predict this sector, it would be important to obtain an historical and current listing of registered vessels and their sizes, the historical and present total consumption of fuel by product type, historical, current and future prices of fuel, anticipated improved engine efficiency standards, and general information on factors which can affect fleet expansion and end-use consumption patterns. As referenced above, the utilization of skidoos for local transportation is important for communities on the coast of Labrador. In order to understand and predict this demand, one would require an historical and current listing of the number of skidoos registered by community, estimated annual average historical and current fuel requirements, and general information on factors which could affect usage and end-use consumption patterns.

Road transportation requirements in remote communities vary depending upon the linkages these communities have with the main provincial highway system. In order to understand and predict demand for this sector, one would need an historical and current listing of the number of passenger and commercial vehicles by engine type by age by community, historical and current demand for motor fuels by community, historical and future motor fuel prices by community, historical and predicted future passenger and commercial vehicles per capita by community, anticipated improvements in energy efficiency standards, and general information on factors which may affect fleet expansion and end-use requirements.

(ii) Research

The research required to collect and prepare information for this sector would require contact with a number of public and private agencies. Provincial government departments such as Transportation, Mines and Energy, and the Newfoundland Statistics Agency could supply useful information. Federal agencies such as Statistics Canada, and federal departments such as Fisheries and Oceans, and Energy, Mines and Resources would represent important sources. In addition, data on community motor fuel consumption would have to be obtained from private oil companies.

(iii) Theory Formulation

As referenced above, the transportation sector is normally divided into four categories: rail, air, marine and road. In the context of remote communities, rail is generally non-applicable. Air transportation requirements are supplied by external carriers on a scheduled and/or charter basis, and the fuel used for this purpose is consequently not applicable to the remote community in question. Marine transportation represents a method of communication with the outside world and is an important source of local transportation. The portion of marine fuel used by operators external to the community, i.e., C.N., is not a valid component of the community's requirements. The marine fuel requirements which are a valid and important component of a community's energy demand are those utilized by individuals for fishing and local transportation. It is therefore necessary to formulate and test the relationships between the variables identified above for this sub-sector. Similarly, for the variables identified above in relation to the use of skidoos and passenger and commercial vehicles, theories have to be formulated and tested.

Government

(i) Variable Identification

As is the case for the industrial and commercial sectors in remote communities, the number of government-operated facilities and institutions is normally quite small. Further, the types of services operated by government departments in these communities varies considerably, ranging from harbour beacons to fish processing facilities. Consequently, it is difficult to find a range of variables which are common to government facilities and institutions in remote communities. The best approach to understanding and predicting government sector energy use in remote communities is to deal directly with the appropriate federal and provincial government agencies.

(ii) Research

The logical approach to collecting information on government energy consumption in remote communities is to deal directly with government representatives either in the community or the regional administrative center.

(iii) Theory Formulation

Given the diversity of institutions and facilities included in the government classification, the most intelligent and simple methodology to employ in forecasting this sector is to extrapolate the data collected during direct field research.

Energy Sector

(i) Variable Identification

The demand for energy in this sector is comprised of that used by energy suppliers, eg. refineries, utilities, to operate their facilities. This demand is distinct from the use of petroleum products for electricity generation, for example, which is assessed and forecasted as a component of energy supply.

For remote communities in Newfoundland and Labrador, the only significant energy sector consumption which is applicable is that used by the electrical generation facilities operated by

Newfoundland and Labrador Hydro. In light of this situation, the in-plant consumption of energy in the facilities operated by Newfoundland and Labrador Hydro is the only information required to be collected.

(ii) Research

The most appropriate way to collect information for this sector is to obtain it directly from the records of Newfoundland and Labrador Hydro.

(iii) Theory Formulation

The best method to use in forecasting the demand for energy in this sector is to review with Newfoundland and Labrador Hydro their plans for the provision of electrical energy to remote communities.

Energy Supply Analysis

(i) Variable Identification

Once the final demand for energy has been projected, the question of how that energy is to be supplied must be addressed.

The variables which have to be identified include: gross production; fuel flared, reduced or lost through shrinkage; net production; imports; exports; changes in inventory; conversions in refineries; conversions to electricity, electricity produced, and conversions to charcoal. By taking account of these variables, the analyst has moved from primary supply to net supply. Net supply, or energy available, should equal final demand.

In the context of remote communities, one can assume that all petroleum products are either imported directly or are produced from crude oil imported into eastern Canada. Electricity is produced from imported diesel fuel oil in generation facilities located at the community level. Petroleum products and electricity are the major conventional energy sources utilized in remote communities. For the other principal energy source used, wood, supply information is not collected in an organized manner.

In terms of assessing energy supply alternatives, eg. hydro, the analyst must collect technical and financial data on the equipment required and capital and operating costs of such facilities. From this information calculations can be computed which compare the cost of energy for these alternatives with the cost of energy for conventional or present sources in order to determine which is the most viable option.

(ii) Research

Most of the information on energy supply can be obtained from the records of Statistics Canada, oil companies and electrical utilities. Provincial and federal forestry departments may provide some information on wood supply. The analyst should be aware that for certain of the supply variables identified above, it may be difficult for government agencies or oil companies to provide details on petroleum supplies at the community level.

(iii) Theory Formulation

In terms of energy supply, the analyst must start with primary supply and move to net supply. The process involves starting with gross production and then accounting for any fuel flared, reduced or lost through shrinkage to arrive at net production. The analyst must then account for imports, exports and inventory changes. Conversions in refineries, conversions to electricity by public and private utilities, the resulting electricity produced by public and private utilities, and conversions to charcoal must be accounted for in order to arrive at net supply.

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